

Convention Special

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# Rock Products and BUILDING MATERIALS

INCORPORATING DEALERS BUILDING MATERIAL RECORD

Volume XV.

CHICAGO, ILL., FEBRUARY 22, 1915.

Number 8

## CAROLINA PORTLAND CEMENT COMPANY

We are the largest distributors of Portland Cement, Lime Plaster, Fire-brick and General Building Material in the Southern States, and have stocks of Standard Brands at all of the Atlantic and Gulf Seaports, and at our interior mills and warehouses, for prompt and economical distribution to all Southern territory. Write for our delivered prices anywhere. Also Southern agents for the "Dehydratine's" waterproofing material. "Universal," "Acme" and "Electroid" Brands Ready Roofing. Get our prices.

Charleston, S. C. Birmingham, Ala. Atlanta, Ga. New Orleans, La.



**Phoenix Portland Cement** UNEXCELLED FOR ALL USES.

Manufactured by  
**PHOENIX PORTLAND CEMENT CO.**

NAZARETH PA.

Sole Selling Agent, WILLIAM G. HARTRANFT CEMENT CO.  
Real Estate Trust Building, PHILADELPHIA, PENNSYLVANIA.

## NOW READY DIRECTORY FOR 1915

Cement, Gypsum and Lime Manufacturers  
NEATLY BOUND VEST POCKET SIZE

**\$1.00 Postpaid**

**FRANCIS PUBLISHING COMPANY**  
537 So. Dearborn St., CHICAGO

**FIRE BRICK** "MOUNT SAVAGE." None Better  
**FLUE LININGS of FIRE CLAY**  
**FIRE PROOFING** "REFRACTO" thoroughly dependable for boiler work and general purposes.

THERMIC FIRE CLAY  
HOLLOW TILE for both partition and outside use.

**Union Mining Company**

GENERAL OFFICES

1113-1117 Fidelity Building, BALTIMORE, MD.

Manufacturing Plants: Mount Savage, Md.

## DO YOU SELL?



WRITE FOR BOOKLET AND PRICES

**AMERICAN KEENE CEMENT COMPANY**  
Sigurd, Utah

## SPECIAL FEATURES OF THIS NUMBER

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THIRTY YEARS OF EXPERIENCE IS  
BEHIND EVERY BARREL OF  
*The Old Reliable*

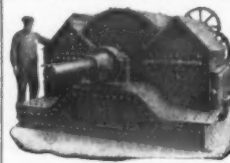
## Giant Portland Cement

A RECORD IN LONG TIME TESTS, UNEQUALLED BY OTHER  
BRANDS OR LARGER OUTPUTS.

*Let us show you.*

**Giant Portland Cement Co.**

6th Floor Pennsylvania Building  
Philadelphia



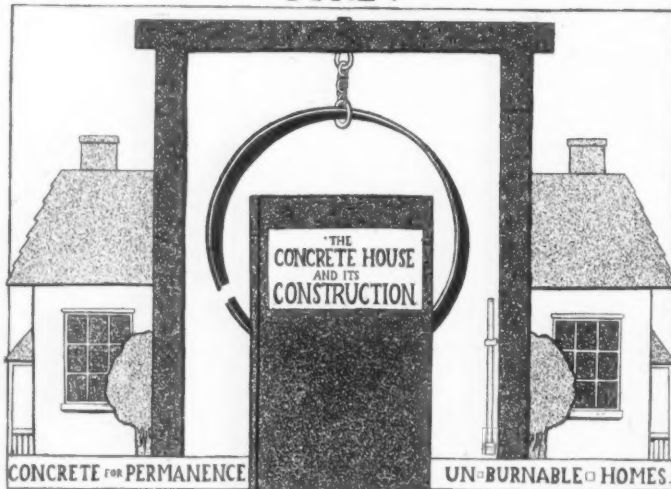
## "PENNSYLVANIA"

**Hammer Crushers** For Crushing and Pulverizing Lime, Limestone, Gypsum, Marl, Shale, Etc.  
Main Frame of Steel, "Ball and Socket" self aligning Bearings; forged Steel Shaft; Steel Wear Liners; Cage adjustable by hand wheel while Crusher is running.  
No other hammer Crusher has such a big Safety Factor.

**Pennsylvania Crusher Co.**  
New York PHILADELPHIA Pittsburgh

BACON \ FARREL  
ORE & ROCK  
CRUSHING \ WORLD KNOWN  
**ROLLS-CRUSHERS**  
EARLE C. BACON, ENGINEER  
HAYMEYER BUILDING, NEW YORK

**FIRE!**



## THE IRON TYRE FIRE BRIGADE

may call if you live in a burnable house. There is only one positive protection against fire—Concrete.

Full free information how to construct of concrete.

A handsomely illustrated 224 page book: "The Concrete House and Its Construction." Price \$1.00. Not an advertisement.

**Vulcanite Portland Cement Co.**  
Philadelphia New York

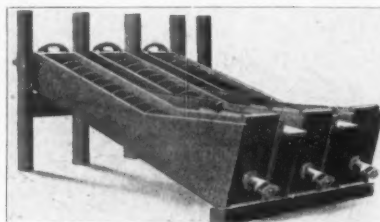


**Giant** BELT for Your Drives  
**Granite** BELT for Your Elevators  
**Supremo** BELT for Your Conveyors

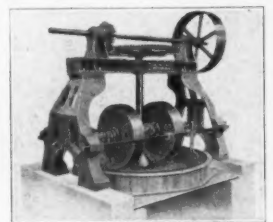
**WHY? ASK US.**

**Revere Rubber Co.**

BOSTON NEW YORK CHICAGO NEW ORLEANS PHILADELPHIA



Sand Washers



9-Foot Dry Pan

**LEWISTOWN FOUNDRY & MACHINE CO.**  
LEWISTOWN, PA.

Builders of heavy duty crushers and glass sand machinery  
Glass sand plants equipped complete

WRITE FOR PRICES AND CATALOG

Daily Capacity  
7000 Barrels



The Quality  
Cement of the  
Middle West

**MORE THAN FIFTEEN YEARS OF SATISFACTION**

THREE PLANTS: ALPENA — DETROIT — WYANDOTTE

## HURON AND WYANDOTTE

Water and Rail Facilities Best Serve the  
Entire Middle West

EVERY BARREL TESTED AND GUARANTEED. SOLD BY THE BEST DEALERS EVERYWHERE

**Main Office: 1525 Ford Bldg., Detroit, Michigan**

Daily Capacity  
3000 Barrels



The Leading  
Concrete  
Cement

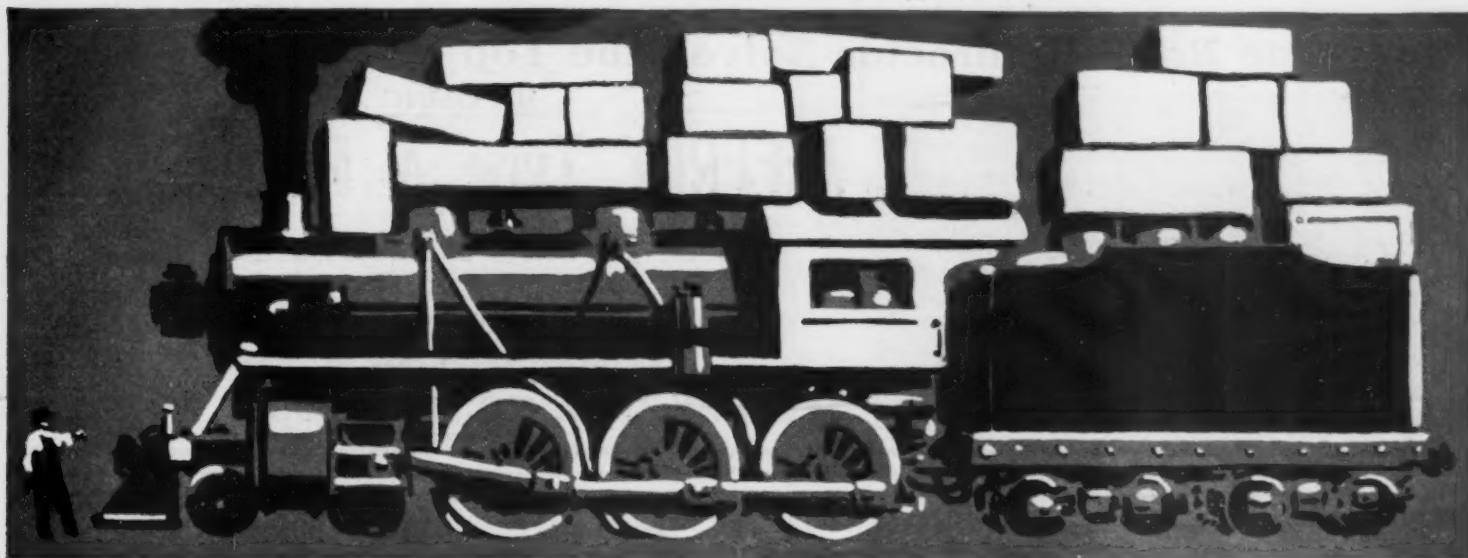
Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS











# Increasing the Freight Rate

What would freight rates be if every railroad CARRIED all its goods on locomotives? What railroad could afford to buy enough locomotives to CARRY merchandise this way? Why do you CARRY goods this way in your motor truck, contrary to a basic law of power and efficiency—the law that you can PULL at least three times as much as you can CARRY.

You expect to see locomotives pulling trains of cars.

You expect to see motor trucks loaded up to the tops of their bodies.

Operating on two absolutely different principles, you expect both to show similar results in costs.

## The Fallacy of the Lonely Motor Truck

Suppose your truck is rated at a ton and a half. That rating is for what you can pile on the body, springs and axles—not for what the truck can pull.

Any good ton and a half truck is able to deliver five tons more on trailers with small increase in tire or fuel costs. This ratio will hold good for any size of truck.

The real business end of a truck is in the same place as the business end of a locomotive—at the draw-bar. One pound of draw-bar pull is worth eight pounds of carry. Two hundred and fifty pounds at the draw-bar will pull a ton on any average road on a properly constructed trailer. Most good trucks have a draw-bar pull equal to one half their rated load capacity. Reduced to a unit factor, these trucks can thus pull four times as much as they can carry—without interfering with their normal capacity.

## Troy Trailers Don't Wear Out Truck Tires

The load on the tires is the load that wears them out. The load behind the tires—the load on the trailer—hardly affects them. Practical tests prove this. Nor does a trailer proportionately increase your gasoline or electric bill. The reason is that whether or not you hitch a trailer to your truck, your power is there just the same; without the trailer you waste your draw-bar pull; with it you use this pull.

## What Does It Mean to You to Triple Your Deliveries at the Present Cost?

Troy Trailers are built specifically for motor-truck purposes and conditions. The average possible increase in motor truck efficiency with Troy Trailers is 300 per cent. Whether it is more or less than this depends on the conditions of service and use. If 300 per cent means anything in money to you, write us with a statement of how many trucks you operate, their size and make, the length and character of their trips, your present costs and such other data as will enable us to tell you whether and why Troy Trailers will help you in your work and what they will change in your costs. Write for Troy Trailer Booklet No. 4-RP, free and without obligation.

## The Troy Wagon Works Company

TROY, OHIO

NEW YORK  
50 Church Street

DETROIT  
319 Hammond Building

WASHINGTON, D. C.  
505 Riggs Building

# Troy Trailers

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

## How One Road Contractor Solved the Top Dressing Problem

BY USING A

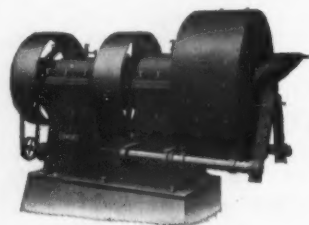
### JEFFREY Type A PULVERIZER

This machine was working within one hour after its delivery, enabling the purchaser to live up to the material specifications of his contract.

Product is ideal for concrete work and for binder material for water bound roads. Agricultural Limestone can be made as a side issue.

Write for Bulletin No. 147-35 and full information

**JEFFREY MFG. CO., 935 N. Fourth St., Columbus, O.**



SYMONS DISC CRUSHER  
PATENTED

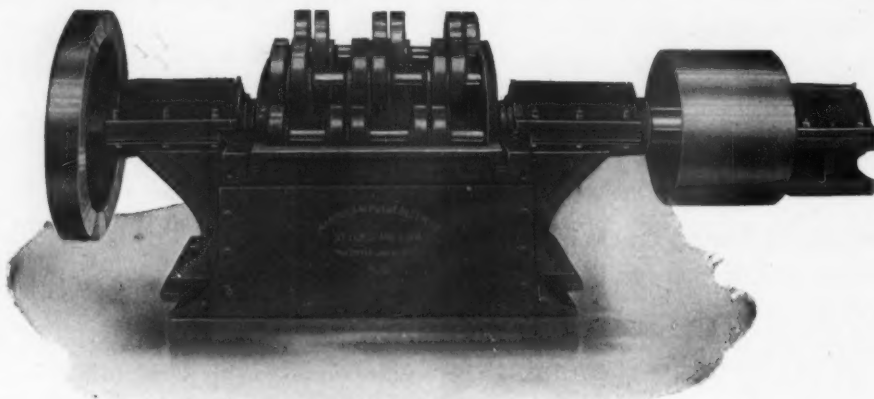
## Symons Disc Crushers

CAPACITIES OF 5 TO 120 TONS PER HOUR

Over 500 Now In Operation  
Eventually You Will Operate One

**Chalmers & Williams, Chicago Heights, Ill., U.S.A.**

EVENTUALLY--SYMONS DISCS



## Pulverize Your Limestone for Agricultural Purposes

This machine will do the work, do better work and save you operating cost.

Superior in pulverizing Sandstone, Gravel, Coke,  
Slag, Quartz, Brick Bats, etc.

Investigate, ask for information, you will find it the strongest, best made and best designed machine for your work.

*Order one—Guaranteed—Test it before acceptance.*

**AMERICAN PULVERIZER COMPANY, East St. Louis, Ill.**

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

Another Large Cement Company Has Adopted Our New Mill

## The Bradley Hercules

**T**HIS makes five cement companies who have decided against high pulverizing costs. This Bradley Hercules Mill means something to every cement plant now using ball mills or kominuters for preliminary pulverizing with an output of 3000 barrels per day or more. Small plants will not be interested as this wonderful mill has a capacity of 100 barrels and over per hour when pulverizing clinker and from 30 to 45 tons of limestone, using about 200 H. P.—pulverizing to a fineness of 50% through a 100 mesh sieve.

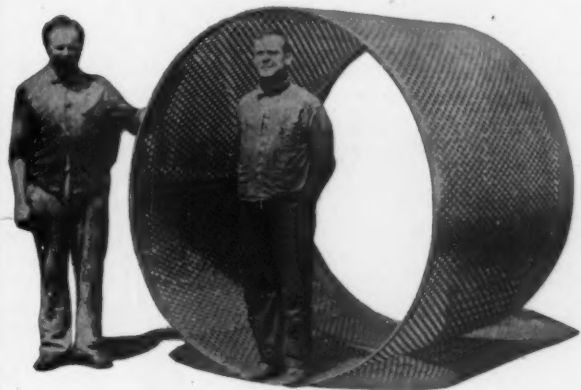
**This is a big mill designed to do big things.** It takes for feed material of a size that is produced by the No. 4 or No. 5 Crusher and reduces it to an ideal tube mill feed, thereby eliminating intermediate pulverizers. **It simplifies grinding and cuts costs to an unbelievable point.** Weighs 45000 lbs.

*Investigation is Invited—List of Installations Upon Request*

**Bradley Pulverizer Company, Boston, Massachusetts**

MANUFACTURERS OF

**THE GIANT GRIFFIN MILL—THE ONLY SUCCESSFUL SINGLE STAGE MILL**



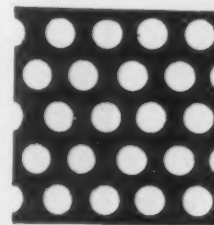
**Conical Screen Shells**  
A Specialty—for  
Gravel Washing Plants

**Screen Sections**  
AND **Dust Jackets**

FOR

**Revolving Screens**

Made accurately to size to fit all makes and sizes of screens.

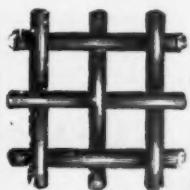


**Flat Screen Plates—Everything**  
In Screens For Crushed  
Stone, Gravel, Sand, Clay, Etc,

**QUICK SHIPMENTS**

OUR ENTIRE ATTENTION IS DEVOTED TO THIS WORK. PRICES RIGHT.

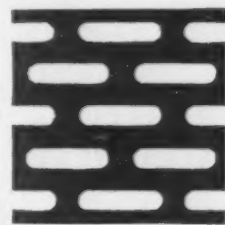
Sole manufacturers of the O'Laughlin Revolving Screen.  
The best screen made for crushed stone.



**JOHNSTON & CHAPMAN CO.**

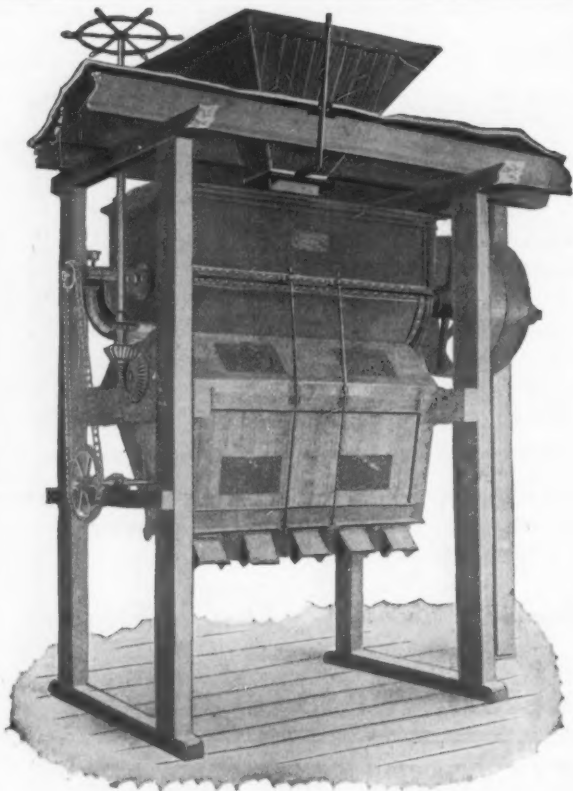
2929 Carroll Avenue

CHICAGO

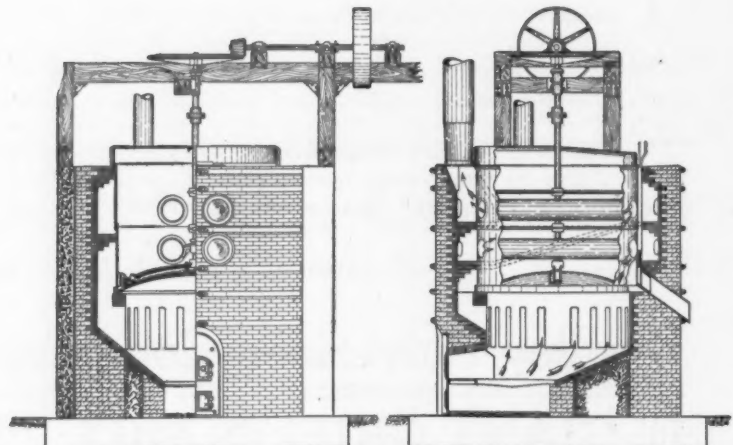
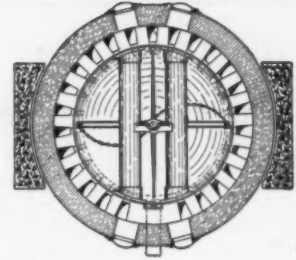
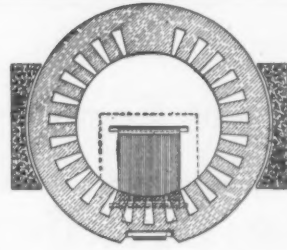


Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

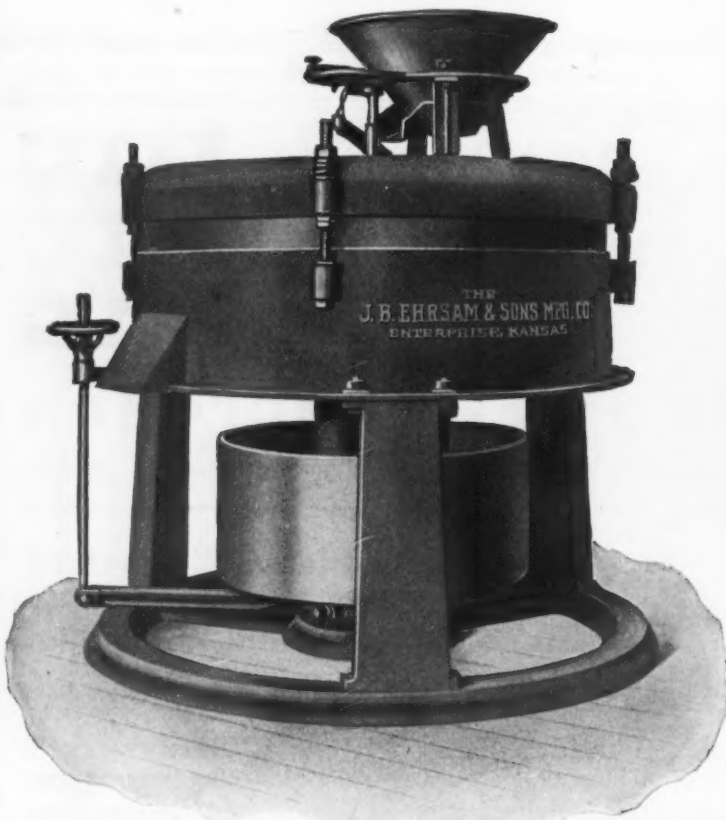




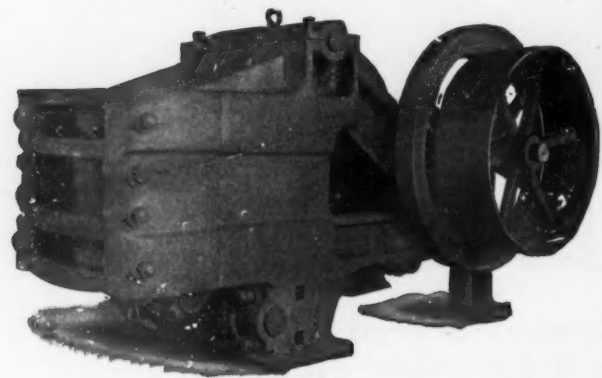
Enterprise Noiseless Mixer



Ehram Calcining Kettles—Built in 5 sizes—6-8-10-12-14 feet in diameter, having capacity of from 3 tons to 20 tons to the charge



Horizontal and Vertical Heavy Duty Grinding Mills



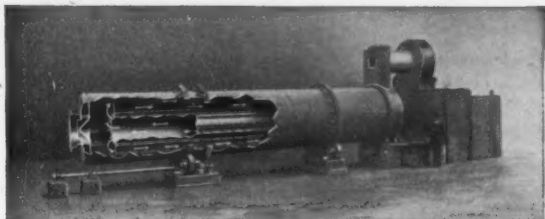
Jaw Crushers Built in all sizes up to 24" x 34" jaw opening. Rotary Fine Crushers in sizes up to 42" inside diameter.

**The J. B. Ehram & Sons Mfg. Co., ENTERPRISE, KANSAS**

Manufacturers of Plaster Mill Machinery, Conveying, Elevating and Power Transmission Appliances

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

## SPECIALISTS IN THE DRYING FIELD FOR THE LAST 16 YEARS



Section showing direction gases pass thru the dryer.

### RUGGLES-COLES "DOUBLE SHELL" DRYERS

are used in all parts of the world, there being more than 400 installations. Over half a hundred are used for drying sand and gypsum at plaster, brick and cement plants.

We build six regular types of dryers, but for special work we build machines to order.

Book "What We Dry" will interest you.

**Ruggles-Coles Engineering Co.**

CHICAGO OFFICE  
McCormick Building

50 Church Street  
NEW YORK

## YOUR PAN NEEDS

THIS pan is the identical pan required for your plant and it should speak to you convincingly of our pan quality. It has put many

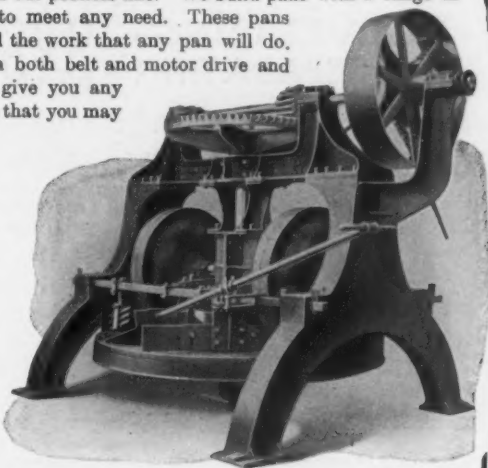
Sand-Lime Brick Plants on a paying basis and will make money for you. There is no line of pans made which will compare with the "Built Right, Run Right" line and your needs can be fully taken care of from our peerless line. We build pans with a range in size and capacity to meet any need. These pans are adapted for all the work that any pan will do. We have them in both belt and motor drive and will be pleased to give you any points on our pans that you may inquire about.

A poor pan is an expensive proposition. Its inefficiency shows in the quality of your product and the size of your repair bills. It also limits your capacity by handicapping the rest of the equipment. Real economy would suggest that your pans be the best possible. We will be pleased to talk pans or any other equipment with you.

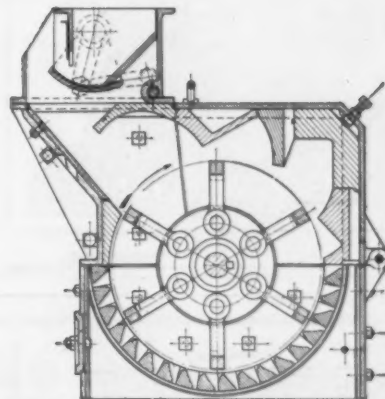
*We Build Complete Equipments for  
Sand-Lime and Clay Brick Plants*

**The American Clay Machinery Co.**

Willoughby, Ohio, U. S. A.



# Pulverators



Cross Section of Allis-Chalmers Pulverator (Patented)

## Pulverizing by a New Principle

**Note that Involute Curve  
The Direction of Rotation**

Advise us your requirements concerning capacity and fineness wanted

*Forward Sample of Your Material*

**Complete Rock Crushing Plants and Cement Mills—  
Power Plants—Electric Motors**

**Allis-Chalmers  
Manufacturing Company**

OFFICES IN ALL PRINCIPAL CITIES

MILWAUKEE,

WISCONSIN.

For All Canadian Business Refer to Canadian Allis-Chalmers, Ltd., Toronto, Ont.  
FOREIGN REPRESENTATIVES:—Frank R. Perrot, 833 Hay St., Perth, W. A.  
Frank R. Perrot, 204 Clarence St., Sydney, N. S. W. Mark R. Lamb,  
Huerfano 1157, Casilla 2653, Santiago, Chile. H. I. Keen, 732 Salisbury  
House, London Wall, E. C., London, England. American Trading Co., Repre-  
sentative in Japan, South America, China and Philippine Islands. Herbert  
Ainsworth, Johannesburg, So. Africa.



**"HERCULES"**

For underground masonry, cisterns, reservoirs, pits, coal and grain pockets.

Watertight, sanitary, hard and dustless floors.

Used with sand and cement to produce a waterproof mortar which will bond perfectly to new or old masonry and permanently waterproof, even if plastered on the inside of a cellar, where the water pressure is outside.

Hercules Colored Coatings; Plaster-bond and Damp-proofing Mastic.

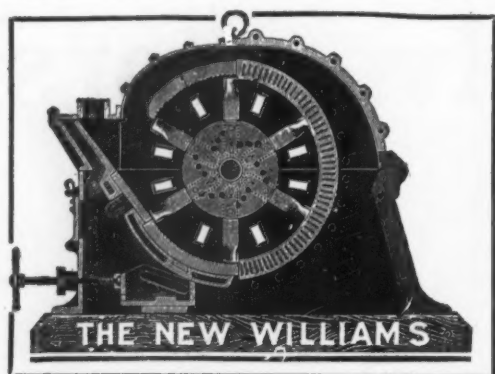
**WATERPROOFING**

**HERCULES WATERPROOF CEMENT CO.**

BUFFALO, NEW YORK

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS





Without Screening or Separating  
**THE WILLIAMS UNIVERSAL FINE GRINDER**  
 on dry limestone will produce a product  
**95%—30 Mesh—60%—100 Mesh**

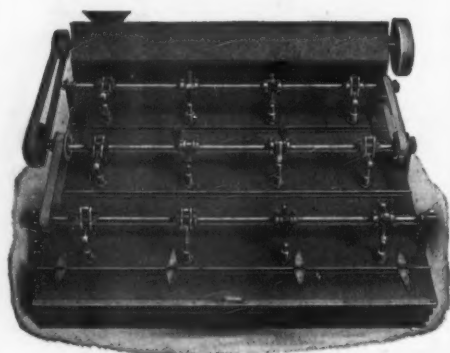
The Williams New Universal Fine Grinder is the only machine having a really adjustable grinding plate. This adjustable plate insures uniformity of product at all times, minimizes repairs, and lengthens the life of hammers fully 50%, allowing from 2½" to 4" more wear off the hammers than would otherwise be possible.

The Williams New Universal Fine Grinder will take 1½", 2", 2½" Dry Limestone and in one operation without the use of screens or separators produce a uniform fine product, something no other machine on the market can accomplish. It will do this with the minimum expense for maintenance and power.

Detail description and illustrations of this machine will be found in our Catalog No. 4, which will be sent to all interested parties on request. Investigate this machine NOW—it will be worth your while. A statement from you as to nature of material to be handled, original size, size product desired, and quantity per hour will enable us to make proper recommendations.

**The Williams Patent Crusher & Pulverizer Co.**

Works: St. Louis, Mo. General Sales Dept.—Old Colony Bldg., Chicago, Ill. San Francisco: 268 Market St.



## STURTEVANT MACHINERY

### CRUSHERS

### GRINDERS

### SCREENS

Thirty Years of Practical Experience has taught us that no one machine is adapted to all purposes. Customers expect correctly designed machines for their special work. Our large line enables one to select properly. It consists of:

**CRUSHERS**—For coarse, medium and fine work on hard or soft rock. Jaw, Rotary and Hammer design.

**CRUSHING ROLLS**—Coarse, medium and fine. Hard or soft rock,—wet or dry.

**TRI-ROLL MILLS**—For medium crushing, giving Two Roll Reductions.

**RING-ROLL MILLS**—For pulverizing hard materials.

**EMERY MILLS and HAMMER-BAR MILLS**—For pulverizing softer materials.

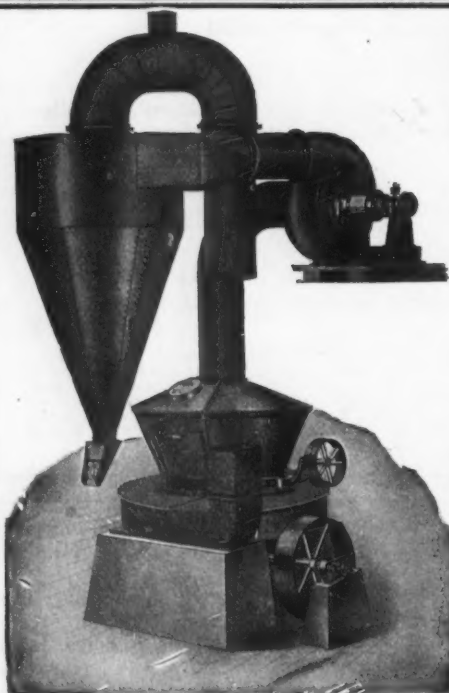
**SCREENS**—Inclined Vibrating and Rotary for fine or coarse work—wet or dry.

Sampling Crushers, Rolls, Grinders and Screens.

Send for Catalogue.

## STURTEVANT MILL CO., BOSTON, MASS.

NEW YORK CHICAGO DENVER PITTSBURGH VICTORIA, B. C. LONDON ENG.



## Making Better Products Commercially Possible

Nearly every manufacturer is familiar with the type of man who has a method "for improving the quality of a product"—without regard to cost. Most anybody can improve things when told that cost is no object.

Improved quality at the same or a lower cost of production however is quite another matter.

It is upon this latter sort of record that the success has been proven of the

## RAYMOND PULVERIZING-AIR SEPARATING SYSTEM

Consider for instance the demonstrated efficiency of the Raymond System in

### Pulverizing Coal for Fuel

Very fine pulverization is the prime requisite in this product and that can be secured by many methods. But it cannot be secured by any other known means as cheaply as by the Raymond System.

In the production of

### Hydrated Lime

the elimination of impurities is the great problem. This can be done in other ways but in none so cheaply as with the Raymond System.

And this record in general is true of nearly all the 75 different kinds of materials, for which the Raymond System has proven its efficiency and economy. Ask for our book.

### Raymond Bros. Impact Pulverizer Company

1301 No. Branch Street, CHICAGO, ILL.

Please send us your book on Modern Methods of Pulverization.

NAME.....

STREET.....

CITY.....STATE.....

### SEND FOR THE



**RAYMOND  
BOOK NOW**

We design special machinery and methods for Pulverizing, Grinding, Separating and Conveying all powdered products. We manufacture Automatic Pulverizers, Roller Mills, Vacuum Air Separators, Crushers, Special Exhaust Fans and Dust Collectors. Send for the Book.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS





## AUSTIN GYRATORY CRUSHERS

Made in Eight Sizes

50 to 5000 Tons Per Day

Plans and Specifications submitted and expert advice free on any problems involving rock-crushing or earth-handling.

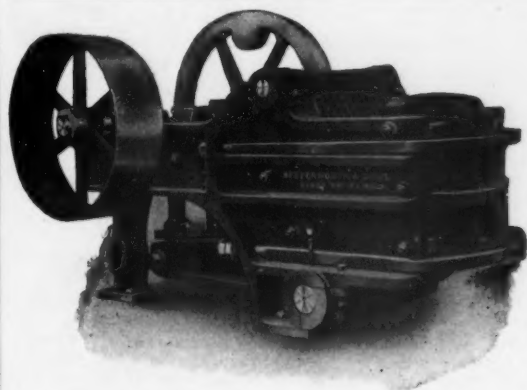
**AUSTIN MANUFACTURING CO.**

New York Office: 50 CHURCH STREET

CHICAGO

Canadian Agents: MUSSENS, Ltd., Montreal

We manufacture:—Road and Elevating Graders, Scarifiers, Road Rollers, Quarry Cars, Dump Wagons, Stone Spreaders, Street Cleaning Machinery.



## Jaw and Rotary CRUSHERS

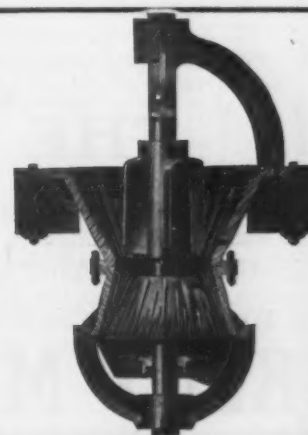
For all Rocks and Ores Softer than Granite

GYPSUM MACHINERY—We design modern Plaster Mills and make all necessary Machinery, including Kettles, Nippers, Crackers, Buhrs, Screens, Elevators, Shafting, etc.

Special Crusher-Grinders for Lime

**Butterworth & Lowe**  
17 Huron Street, Grand Rapids, Mich.

Nippers—17 x 19", 18 x 26", 20 x 30", 24 x 36" and 26 x 42"



Crackers—6 sizes—many variations.



The Grinding is Finished in one Operation

All working parts can be removed and replaced without disturbing belts, feeder, etc.

## BONNOT PULVERIZER

**Grinds and Screens Limestone, Raw Lime and Hydrated Lime**

**Does it at One Operation. Gives You Any Desired Fineness**

GRINDING LIME IS LARGELY A SCREENING PROPOSITION. THE BONNOT PULVERIZER HAS THE LARGEST SCREENING SURFACE AND CONSEQUENTLY THE GREATEST CAPACITY.

NO OTHER MACHINE LIKE IT IN THE ACCESSIBILITY OF SCREEN AND GRINDING PARTS.

No. 4 Catalog Explains These Advantages

**THE BONNOT COMPANY**

909 N. Y. Life Bldg.  
KANSAS CITY, MO.

**CANTON, OHIO**

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



# MAXECON

Means MAXimum of ECONomy

Years of experience with the assistance of our hundreds of customers has found THE SOLUTION OF GRINDING HARD MATERIALS. The MAXECON PULVERIZER combines highest EFFICIENCY, greatest DURABILITY and assured RELIABILITY, Uses the LEAST HORSE POWER per capacity. Embodies the features of our Kent Mill with improvements that make it MAXECON.

**WE DO NOT CLAIM ALL of the CREDIT for this achievement**

We have enjoyed the valuable suggestions of the engineers of the Universal Portland Cement Co. (U. S. Steel Corp.), Sandusky P. C. Co., Chicago Portland C. Co., Marquette Cement Mfg. Co. Western P. C. Co., Cowham Engineering Co., Ironton P. C. Co., Alpena P. C. Co., Castalia P. C. Co., Pennsylvania P. C. Co., and many other patrons.

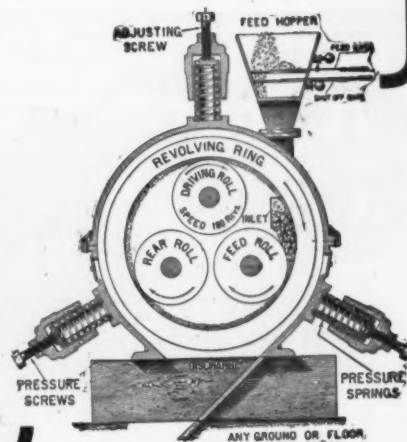
## THE RING WOBBLES

The FREE WOBBLING POUNDING RING instantly and Automatically ADAPTS its position to the variations of work.

Its GRINDING ACTION is DIFFERENT than any other; besides the STRAIGHT rolling action of the rolls, the SIDE to SIDE motion of the ring makes the material subject to TWO crushing forces and DOUBLE OUTPUT results.

### KENT MILL CO.

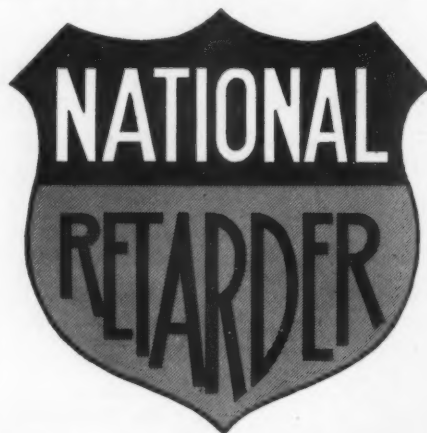
10 RAPELYEA ST., BOROUGH OF BROOKLYN, N. Y. CITY  
LONDON, W. C., 31 HIGH HOLBORN  
BERLIN-HOHENSCHOENHAUSEN



## JUST A CHANGE IN OFFICE ADDRESS

We assure you the same prompt service and excellent quality of product

Eastern Plant  
PORT CLINTON  
OHIO

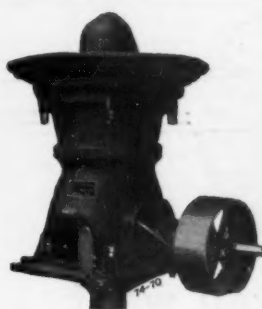


Western Plant  
WEBSTER CITY  
IOWA

### THE NATIONAL RETARDER COMPANY

930 North Halsted Street, CHICAGO, ILL.

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## McCully Gyratory Crusher

has perfect suspension for main shaft, removable countershaft bearing and steel gears.

Efficient oiling devices, great strength and simple construction give a perfect rolling motion that minimizes power consumption and possibility of breakage. Described and illustrated in Bulletin PM-4-58.

## Rock Crushers

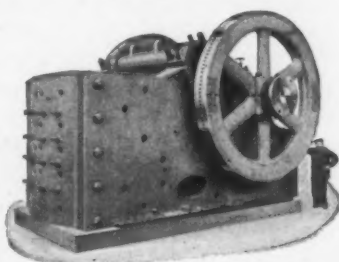
*The largest crusher in the world operating on trap rock is a*

### Superior Jaw Crusher

Installed March, 1910, in the quarries of the Birdboro Stone Co., Birdboro, Pa. It produces 3500 to 4000 tons per day.

Built in the following Receiving Opening Sizes: 36"x24"; 42"x40"; 60"x48"; 84"x60". Described in Bulletin PM-4-58.

Write for Bulletin.



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District Offices: Chicago, El Paso, San Francisco, Atlanta.

### PRINCIPAL PRODUCTS

Rock Crushing Machinery, Mining and Smelting Machinery, Cement Making Machinery, Wood Impregnating Plants, Locomotive Gas Generators, Section Gas Producers, Cyanide and General Steel Tank Works, Woodbury Jigging System, Lead Burning. M-277.2

**H**OISTING rope of every description for elevators, mines, coal hoists, ore hoists, conveyors, derricks and cranes, stump pullers, steam shovels, dredges, skidder rope for logging, ballast, unloading. Towing hawsers, mooring lines, tiller rope, and ship's rigging. Power transmission. Suspension bridge cables. Rope for all haulage purposes. Flattened strand rope. Non-spinning rope. Steel clad rope. Locked coil track cable for aerial tramways. Flat rope.

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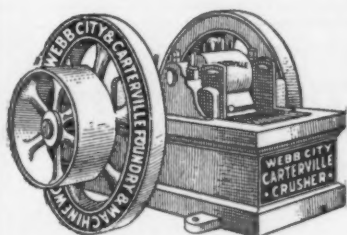
## American Steel & Wire Company

Chicago, New York, Worcester, Cleveland, Pittsburgh, Denver. Export Representative: U. S. Steel Products Co., New York. Pacific Coast Representative: U. S. Steel Products Co., San Francisco, Los Angeles, Portland, Seattle.

The real value of a crusher lies in its durability.

We assert that our crushers surpass all others in their simplicity of construction, efficiency, and in the small cost of maintenance and repairs.

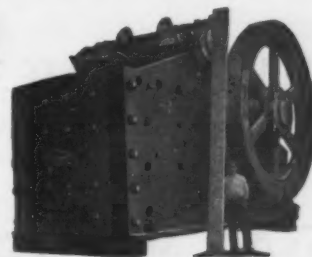
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4 tons  
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will crush the hardest kinds of rock and are built so that they are capable of taking the largest rocks that a six ton steam shovel can handle.

All sizes are fitted with water cooled bearings and pitman to insure cool running under continuous duty.

All wearing surfaces have renewal manganese steel facings.

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It is volume of business that makes you a profit in handling lime. Volume is much easier to secure when you sell a standard like



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Everyone knows it—the architect who specifies it for plastering, the engineer who uses it for waterproofing concrete—down to the mason who insists on 10% of Tiger Brand in his mortar so that it will spread easier.

All these men are pulling for you—helping you to sell more when you handle Tiger Brand.

**The Kelley Island Lime & Transport Co.**  
CLEVELAND, OHIO



## **This is what you want in Hydrated Lime, Mr. Dealer**

Lime that is perfectly slaked, of extreme fineness, that is positively guaranteed not to "pop."

Monarch Hydrated Lime is of absolute uniformity, no underburned or overburned lime to be eliminated.

It's a pleasure to dealers to recommend this well known Brand. It means more business, more calls for Monarch Brand, More Profits for you.

Monarch publicity service is a new aid to you in selling and creating a call for Monarch Hydrated Lime. Be a Monarch Man. Write us today.

**National Lime & Stone Co.**  
CAREY, OHIO

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is best for

## **MASON WORK and PLASTERING**

Sold to **Dealers** only

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Used by the United States Government since 1876

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ESTABLISHED 1860.

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The sales and accounting departments of the Mitchell Lime Company have been removed to Mitchell, Indiana. Closer touch with plant operations will enable us to materially improve our service to customers. \* \* \* \*

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**MITCHELL LIME COMPANY**  
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## The Ohio and Western Lime Company

**WORKS AT**  
Huntington, Indiana  
Marion, O.  
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Sugar Ridge, Ohio  
Tiffin, Ohio  
Genoa, O.  
Limestone, Ohio  
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**Capacity**  
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**Per Day**

MAIN OFFICE: Huntington, Ind.

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**IF IT IS**  
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(STRONGEST IN OHIO)

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# SAND AND GRAVEL EQUIPMENT

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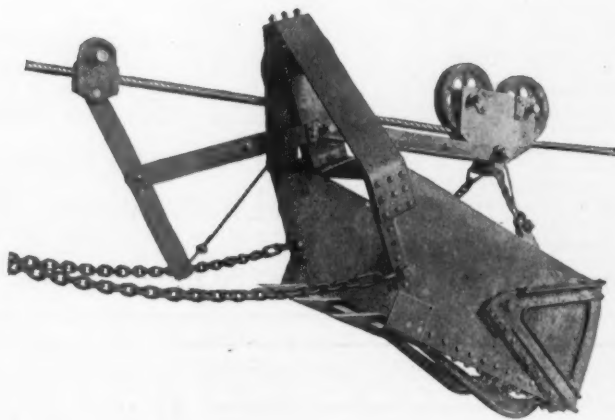
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SILVERWOOD SAND & GRAVEL CO., SILVERWOOD, IND.  
(Main Office, Mattoon, Ill.)

THIS is the second plant we have built for this company, who gave it to us without competition. Their satisfaction and others', makes us certain that we can fulfil your requirements in a sand and gravel washing plant.

THE Dull Bucket is especially adapted for gravel plants, stripping purposes, loading cars, and handling bulk material. We have had 15 years of engineering experience and offer our services to aid you in your problems.



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## Haiss Wagon Loaders

(Patented)

dig and load trap rock, sand, gravel, coal, coke, etc., at a rate of 1 cu. yd. a minute, and at a cost of less than 1 cent a cu. yd. for electric power.

Haiss Wagon Loaders save 10 cents a cu. yd. on all material handled with them.

Write for cost comparing data, and on how to get more trips per day with your present delivery equipment.

**The Geo. Haiss Mfg. Co., Inc.**  
146th St. and Rider Ave., NEW YORK CITY

## Are You Getting Full Capacity From Your Plant?

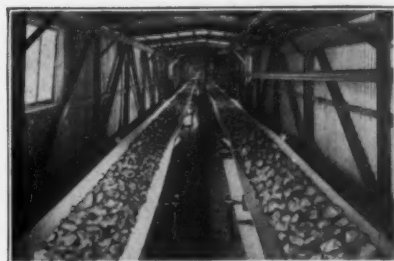
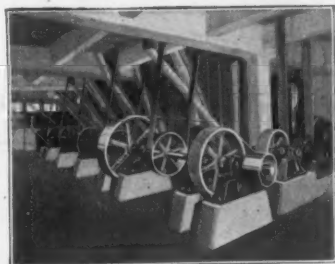
To get this, your elevating, conveying and screening system must be able to deliver the full capacity of your crushers every minute that you run.

If these parts of your equipment are continually falling down on the job or need a large amount of repairing to keep going, **you are losing money.**

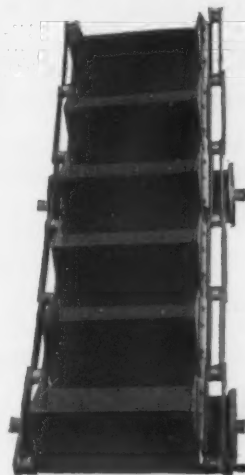
If you want equipment that you can depend on *twenty-four hours a day every day in the season, specify and insist on*

WELLER-MADE

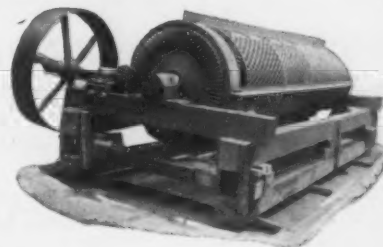
Complete  
Power  
Transmission  
Equipments  
of all kinds.



Belt  
Conveyors  
for any  
material  
10" to 60"  
wide.



Heavy Bucket Elevators up to 84"  
wide and 36" pitch.



Revolving  
Screens  
of every  
type for  
every  
purpose.

Special  
enclosed  
Screens for  
dusty or fine  
materials.



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Send for General Catalog P. 20

**CHICAGO**

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# HYDRATED LIME

## Its Marvelous Increase In Consumption

### The Kritzer Service

Any lime can be successfully hydrated by our process; but whether your lime can be hydrated and successfully marketed is another question. We study your proposition and the possibilities of its commercial success, and advise you accordingly. Our ten years' experience in the business is a valuable assistance in this. Ours is not a mail order proposition. We investigate our customers' proposed plant thoroughly before we will enter into a contract with them. We turn down more prospects than we advise to go into the business. We can't afford to have any failures. Our customers' success is our success.

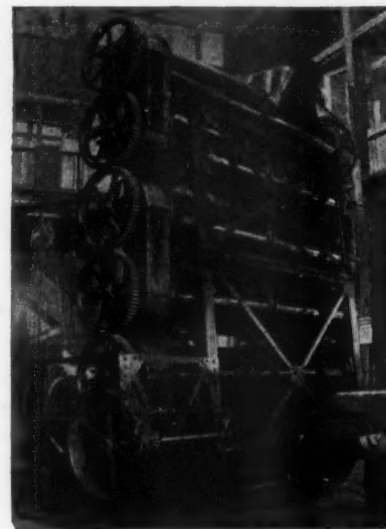
**WRITE TO US**

### Are You Meeting the Increasing Demand for Hydrated Lime?

There is nothing forced or unnatural about the growing popularity of this product. It is a natural growth resulting from a widespread awakening to the advantages of Hydrated Lime for a variety of uses—as waterproofing for Concrete, in wall plaster, and in almost every case where lime is called for. In hydrated form it is weatherproof, more easily handled, and better adapted to modern methods, both of commerce and construction. A continued growth of the demand may therefore be expected.

### The Kritzer Way

insures a product which will hold a continued place for itself on the market. We install plants complete, designed by our own expert engineers to meet your local conditions and turn out a uniform grade of Hydrated Lime of the highest standard, and with the greatest economy in cost of production. The Kritzer Continuous Hydrator, and the accessories installed with it, are the recognized standards in this line.



KRITZER CONTINUOUS  
PROCESS

**THE KRITZER COMPANY** Chicago, Ill.

## Perfect Lime Burning Economy

has resulted from the use of the

DUFF PATENT

### GAS PRODUCER INSTALLATION

This device is in successful and satisfactory operation in the following representative plants:

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Ohio & Western Lime Co., Gibsonburg, O.  
National Mortar & Supply Co., Gibsonburg, O.  
Knickerbocker Lime Co., Philadelphia, Pa.  
Dominion Lime Co., Lime Ridge, Quebec.

Installations now being made in other plants.

**DUFF PATENTS CO., Inc.**  
PITTSBURGH . . . . . PENNSYLVANIA

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EXPANDED CUP  
**SELF FURRING  
 METAL LATH**  
**SAVES 3 TO 5¢ A SQ. YD.**

This is certain to be a big year for metal lath. People everywhere are alive to the fact that metal lath gives **protection** and **better service** and in the end, **saves the owner money**. Last year we doubled our sales of the year before. Do you know the important facts about metal lath? One big fact is that

# Sykes Expanded Cup Lath

requires no furring strips; and so saves 3 cts. to 5 cts. a sq. yard

This Expanded Cup lath is crimped so as to provide a perfect key for the mortar. It becomes firmly embedded in the stucco or plaster.

Another important fact—Sykes Self-Furring Metal Lath is cut with a wider strand than other makes so that, when cut from the same gauge of metal, Sykes is **Heavier, Stronger and Better**. Don't judge metal lath by gauge alone but by **gauge and weight**.

**Sykes Expanded Cup Lath (Self-Furring) is best for Stucco Work for Overcoating and for Plaster Work. It can't be applied wrong.**

Indorsed by architects; approved by U. S. Government for Post Office work. Write today for Free Sample and Free Book which gives complete specifications for Stucco Work on Metal Lath. This book will save money for you.



## Sykes Metal Lath & Roofing Company

508 River Road, WARREN, OHIO

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ST. FRANCIS WOOD GATEWAY, SAN FRANCISCO, CAL.

**MEDUSA WHITE PORTLAND CEMENT**

USED IN ITS CONSTRUCTION

RESULTS rivaling that of white marble can be obtained with Medusa. It is stainless, of pure white color and remarkable strength and fineness. Medusa is the first true white Portland cement ever manufactured and can be used for exterior as well as interior work. The U. S. Government has used Medusa White in many post offices and other buildings, which should be conclusive evidence of its high quality.

Write for free illustrated booklets and samples of

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 MEDUSA WHITE PORTLAND CEMENT  
 MEDUSA WATERPROOFING  
 MEDUSA WATERPROOFED CEMENT  
 (GRAY AND WHITE)

**Sandusky Portland Cement Co.**

SANDUSKY, OHIO

**THE IMPROVED EQUIPMENT CO.**

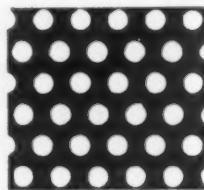
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COMPLETE GAS PLANTS      GAS BENCHES  
 LIME BURNING PLANTS      GAS PRODUCERS  
 SPECIAL INDUSTRIAL FURNACES

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 Department in this issue—there  
 are some important items for  
 your attention.



**"HENDRICK"**  
**PERFORATED STEEL SCREENS AND**  
**ELEVATOR BUCKETS**

—STAND THE TEST—

Let us figure on your requirements.

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DIRECT HEAT  
**DRYERS**

FOR

**Bank Sand, Glass Sand,  
 Rock, Clay, Coal, Etc.**

All Mineral, Animal and Vegetable Matter

We have equipped the largest plants  
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 —S. C.—

**American Process Co.**

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**INSPECTION CEMENT & REINFORCING STEEL**  
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Cement Tests, Chemical Analyses  
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**Cement Making Machinery****THE FULLER ENGINEERING CO.**

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# Rock Products and BUILDING MATERIALS

INCORPORATING DEALERS BUILDING MATERIAL RECORD

Volume XIV.

CHICAGO, FEBRUARY 22, 1915.

Number 8

PUBLISHED SEMI-MONTHLY.

DEVOTED TO

Quarry Products, Cement, Lime, Plaster, Sand and Gravel, Clay Products and Building Specialties—Fireproof Building and Road Construction.

THE FRANCIS PUBLISHING COMPANY.

EDGAR H. DEFEBAGH, Prest.

Seventh Floor, Ellsworth Bldg., 537 So. Dearborn St., Chicago, Ill., U. S. A.  
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Communications on subjects of interest to any branch of the industry are solicited and will be paid for if available.  
Every reader is invited to make the office of Rock Products and Building Materials his headquarters while in Chicago.  
Editorial and advertising copy should reach this office at least five days preceding publication date.

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## The Housing Instinct.

One of the primary instincts of primeval man and perhaps the first indication of civilization is to build, and build he must, first for the necessities of his own comfort, and then to dedicate and to share the result of his efforts as a builder with the chosen companions of his affection.

There is little doubt that the curtailment of the opportunity to exercise his instinctive propensity to build under our peculiar civilization of twentieth century ideals has had a whole lot to do with the recognized feeling of unrest and dissatisfaction which is the main cause of jealousy and mistrust that is the worst feature in our citizenship.

The great housing problem of the masses is the one stupendous question of our internal development that has got to be settled in the near future, if our institutions are to remain permanent and our form of government obtain unimpaired. The problem will never be solved through the medium of real estate sharks or mortgage loan Shylocks. We must have an entirely new ideal of some kind in which the instinct of the builders can be satisfied. This cannot be accomplished by any system of landlord or overlord builders, who suck from 50 to 80 per cent profit upon the cost of materials and labor out of the man who is following his natural instinct to build.

The moral influence of the liberating of the citizen's instinct to build is of greater consequence to the stability of the state than are the public schools, the trade schools, organized labor or any of the half-baked or partially digested institutions with which we have attempted to improve our civilization, while neglecting a human motive that will not and cannot be downed. The reason why so many men with handsaws and hatchets assert themselves to be builders with a few boards and light timbers is that observa-

tion has taught them this one way to construct the objects which their eyes have fastened upon as one of the universal needs of the human family.

With the introduction of Portland cement and the use of it in conjunction with sand and gravel and crushed rock, which are everywhere the cheapest materials known to man, a new vista was opened to the builders, a new means for the gratification of the inherent principle of the builder in every locality. It offered a path for the safe expenditure of money in the erection of buildings of every description in a way to secure their permanence, and their safety beyond anything that had ever been known before.

There are hundreds of thousands, yes, millions of people in this country who hailed the introduction of concrete construction with much joy, but who have not yet learned that the day has arrived and is here when concrete is within the reach of the humblest as well as the proudest builder who is itching to gratify his instinct to build. Somehow in the commercial haste, or in the incongruous mixup of engagements or other entanglements in modern life we have failed in delivering the message as it should be delivered, so that all the builders, which is equal to saying all the masculine division of humanity, can readily recognize the fact that concrete is a universal material, universally applicable and universally available to all; and that it is cheaper in first cost, as well as cheaper in the long run for the builders to use and so attain the best, safest, most sanitary, and most permanent construction.

This amounts to the greatest achievement of civilization. It is the concentrated essence of all the progress of learning that has been handed down to us by the ancients. Perhaps it is the first fruit of the millenium that is to give the world a perfect civilization, in which all mankind shall be satisfied, for satisfaction springs out of the gratification of all of the right instincts in man, and in this condition, his life is complete, and what has been misnamed bad instincts disappear automatically.

To take such a part in each of the succeeding Cement Shows as we have seen them passing from year to year, and watch the stream of human beings pour through the great Coliseum, and to collect from them the expressions that come out of their hearts, one could not be an observer of character or a student of philosophy and not recognize that the flood of American citizenship is asking one single concentrated question of the cement industry through its public expression as conducted by the Cement Products Exhibition Co., and that question put into plain, straightforward English would read for each one of them, "Where do I come in? What is my part of the cement industry? What door of opportunity does it open to me as a builder?" Not once, but more than five thousand times have utterances been made, which upon being philosophically interpreted and boiled down recrystallize into these very questions.

We are very busy selling cement, or mixers, or block machines, or conveying devices, together with all of the equipment for the use of the contractors, and each of these things are of importance, indispensable, and a leading part of the work of education that we have undertaken. But if this industry is really to come into its own, thrive, prosper, and achieve its full destiny, these very questions have got to be answered in a satisfactory way, and they are well worthy of the highest efforts of the best brains that the industry can focus upon the solution of its own greatest problem, its own greatest achievement, for they are one and the same thing.



# WITH YOU and ME

J. H. Waightman, formerly with the Edison Portland Cement Co., of Philadelphia, Pa., will represent the Giant Portland Cement Co. in the New York district, succeeding Wallace King, who died some weeks ago.

E. J. Dowdall, of the Universal Portland Cement Co., has just returned from the Canal Zone, where he made a detailed study of the concrete work of the great canal. He is brown as a bun and talks bad Spanish like a native of the isthmus.

E. R. Ackerman, president of the Lawrence Portland Cement Co., New York, attended the Chamber of Commerce meeting at Washington recently, as did Percy Wilson, secretary of the Portland cement manufacturers' association. Each was enthusiastic over the results to be obtained by close co-operation of all business men with the chamber for more enlightened legislation at our big capitol.

The employees of the Lehigh Portland Cement Co., of Allentown, Pa., were recently the guests of the company at the Lyric theater, where "A Pair of Sixes" was playing. The lady employees were the guests at a matinee, while the gentlemen folks attended an evening performance. This policy of engaging seats for the employees of the company once every year is a time-honored custom of the company.

A. C. Newberry, son of S. B. Newberry, president of the Sandusky Portland Cement Co., has written a treatise on the subject of good roads, which is being distributed from the Sandusky booth in the middle of the Coliseum. Young Mr. Newberry is a Cornell man who has devoted a great deal of study to the subject of road requirements and has produced in his little book some material that is worth everybody's perusal and study.

C. B. Fry, of the Keystone Plaster Co., Philadelphia, was forced to bed during the week of Feb. 7-13. On Saturday, Mrs. Fry induced him to spend that day and Sunday at Atlantic City, where the salt air breezes aided materially in his recuperation. As a result Mr. Fry was back on the job on Monday morning and able to attend the meeting of the dealers at Allentown on Tuesday. He is not entirely in the best of health, but with the aid of his valuable helpmeet he is sure to be himself again in a short time.

United States Treasurer John Burke, is taking an active part in the good roads movement and has accepted the office of treasurer of the American Highway Association, to succeed the late Lee McClung, who from the time of the formation of the association until his death, a few weeks ago, was an active worker for the betterment of road conditions and found time from his duties as treasurer of the United States to give the closest attention to road problems. Mr. Burke has as his colleagues in the management of the American Highway Association, Fairfax Harrison, president of the Southern Railway, president; Logan Waller Page, director of the U. S. Office of Public Roads, vice-president; and James S. Harlan, chairman of the Interstate Commerce Commission, chairman of the board of directors.

## Wilson Goes With Hagar.

Announcement has been made to the effect that Gordon W. Wilson, assistant secretary of the Universal Portland Cement Co., Chicago, has resigned his position, effective March 1, when he will become affiliated with the cement interests of which Edward M. Hagar is to be the head. Mr. Wilson's business career makes very interesting reading and demonstrates how ability and close attention to details bring success.

Some nine years ago Gordon Wilson started in as billing clerk and through sheer ability rose to the position of chief clerk of the accounting department of the Universal company. He has been



GORDON W. WILSON, CHICAGO, ILL.

with the Universal since 1905, and some three years ago was made assistant secretary, which position he has held ever since.

Mr. Wilson has made a close study of the cement sack proposition and at the present time is chairman of the Sack committee of the Association of American Portland Cement Manufacturers, and is one of the leading authorities on sacks in the country. He it was who invented the present method of bundling sacks, which is now considered by railroad authorities as standard and is so classified in all tariffs. Mr. Wilson is now giving a great deal of time and attention to the matter of shipping cement in bulk. In 1912 the Universal Portland Cement Co. shipped about two carloads of bulk cement, while in 1914 they shipped 250,000 barrels in bulk, the users claiming that they made a saving of five to ten cents a barrel over the sacks.

Morris Metcalf, assistant to the president of the Universal Portland Cement Co. resigned February 1, and it is understood that he will be connected with the Hagar cement interests in the same position as he formerly had with the Universal.

Norman D. Fraser, of the Chicago Portland Cement Co., Chicago, Ill., went to Memphis a few days ago to meet Col. Johnson, of the Union Sand & Material Co., of St. Louis, where a battle royal will be driven out on the golf course.

J. C. Van Doorn, Northwestern sales agent of the Universal Portland Cement Co., of Minneapolis, brought a big delegation from the Twin Cities to the various conventions during the Cement Show. Van has always been a heavy worker in this line.

C. W. Boynton, one of the familiar faces in cement promotion on the technical side, walked into the Cement Show quite naturally on time. He has been in California for several months, but force of habit brought him back to the show and the institute.

The Salmen Brick & Lumber Co. is now located in its new office suite 911-913, Whitney Central building, New Orleans, La. It has opened up one of the most elaborate face brick display rooms in the South. The display rooms are now open to the architect and the public.

A. Y. Gowan, of the Lehigh Portland Cement Co., carried the N. B. S. A. banquet by storm with his well worded speech of exhortation. His conclusion tendering the biggest appropriation for the good of the cause showed the whole-hearted co-operation that Lehigh extends to the dealers.

Edward J. Cruise, who for seven years has been with the Meacham & Wright Brick Co., of Chicago, is announcing to friends that he is now on the staff of the sales department of the Chicago Portland Cement Co. Cruise travels in the suburbs of Chicago, where, between walks, he smokes "Chicago AA" cigars.

H. A. Moore, secretary and treasurer of the DeFrane Sand Co., Philadelphia, Pa., severed his connections with that concern Feb. 1. His plans for the future are undecided. Reece Bailey, head salesman of the DeFrane Co., will leave March 1 to go with the Dexter Portland Cement Co., who will open an office in the Land Title building, Philadelphia.

The Lehigh miniature city at the Cement Show attracted thousands of visitors, who learned, under the tutelage of Cols. Viets, Rohrer, Paulson, Roads, Rogers and several unofficial assistants, just how cement is made and shipped. Also they liked the nice, comfortable looking homes and the well kept lawns. The pretty object lesson in concrete along with Lehigh hospitality were equally attractive.

Bert Swett, the genial and much beloved Eastern sales manager of the Lehigh Portland Cement Co., was taken sick with an attack of bronchitis while attending the Cement Show at Chicago. He left his bed at the Sherman hotel before recuperating in order that he might be able to mingle among the dealers of Eastern Pennsylvania at their convention at Allentown on Feb. 16. At the latter place he was advised by a good many of his friends, and ordered by a few of the intimate ones, to retire to his home and place himself in the care of Mrs. Swett until he had entirely overcome his ailment.



## The Annual Cement Show.

When the Cement Products Exhibition Co. was organized about eight years ago there was a question in the minds of some of the men who recognized the immediate need at that time of something of the kind if a regular annual cement show could be conducted as a permanent institution. Some of the incorporators of the company felt that everybody within reasonable traveling distance of Chicago would get all the education that they could hold in two or three shows, and in the same number of conventions of the American Concrete Institute, always a recognized part of the grand plan of concrete promotion. The growth of the show has kept pace with the ever growing pyramid of information upon concrete construction developed in the Institute.

The shows from year to year have proved to be to the exhibitors a cheap and efficient means of meeting the buying public. Purchases of machinery that have been made at cement shows mount up into the millions, and a larger proportion of these sales were made to contractors and others who might not have been reached by the sellers otherwise. Again, the purchasers come back to the shows year after year to buy the latest improvements or to give out repeat orders where they are well satisfied with their original selections. Thus, the annual cement show at Chicago has become the recognized "Rialto" or favorite market place for concrete machinery and equipment of every type. Nearly every exhibitor reports a list of sales, and prospects far beyond their expectations, and many of the purchasers remark that they had intended only to look about, but being convinced of the completeness of the selection decided to close the deal for the outfit for the coming season. This idea has grown to such an extent that there are enough buyers who annually come to the show to purchase equipment to provide every exhibitor with a customer practically all the time of the exhibition.

Cement shows have been held in New York, Pittsburgh, Kansas City and elsewhere, but in no other city has the market place value taken root as it has in Chicago, which seems to be the hub and center of the country for such an institution. The approval of the Chicago Cement Show opens the best path for the standardizing of any mixer or other machine or device used by cement users.

The last act on the program before the curtain was pulled down on the eighth annual Chicago Cement Show Wednesday evening, February 17, was very impressive and is certainly worthy of mention. After the orchestra had played its last request number, away up in the loft close to the roof of the great Coliseum, and the sweet singer had disappeared from the gaze of the multitude, the salesmen and representatives of the various concerns exhibiting at the exposition formed in procession and marched slowly around the aisles with the musicians at their head. A solemn dirge was played and right behind the band marched a number of pallbearers carrying a wooden coffin, draped with crepe and covered with artificial flowers, on the top of which were cards with the following inscriptions, referring to the end of the eighth annual cement show: "Rest in Peace"; "Our Best Friend"—cement. After the Coliseum had been traversed the casket was deposited in a Norwalk vault. Thus ended the mournful part of the ceremonies.

The active participants in the show then proceeded to tour the building with a lighter step and gathered in the center of the Coliseum where, with the aid of the musicians, they rendered a number of popular songs, the exercises concluding with the following ditty sung to the tune of "Tipperary":

It's a long way to Nineteen-sixteen,  
It's a long way to go.  
It's a long way to Nineteen-sixteen

## The BUILDERS' POET

### THE VISITOR'S VERSION.

#### I.

We went back to old Chicago, just to see the Cement Show,  
Shake hands and limber up a bit just like a year ago,  
Inspect the latest mixers, and hear the rumbling roar  
Of batteries of block machines that make our ear drums sore  
We love the gay confusion, we love the dead'ning din,  
And laughed aloud in the jostling crowd that was ever surging in;  
There in the Coliseum, it's the greatest thing we know  
To be back in old Chicago when they open up the Show.

#### II.

We went back to old Chicago for a week of work and fun,  
Away with sleep, we let that keep till the show week's work was done.  
Eight times our yearly pilgrimage from East and South and West,  
We've hit the trail, and without fail each show is far the best.  
Of course it costs us money, but we always get a clew  
To something worth as much again before the show is through.  
It broadens our horizon and it makes our business grow  
To go back there again each year and gather at the Show.

#### III.

We went back to old Chicago, saw the salesman's welcome hand,  
Extended there to give us cheer, and have us understand  
The booth he stood in front of was just what we came to see,  
And he took us in to sit and chin, for a merry nut is he.  
We let him tell his story just as he's paid to do,  
And if we're wise we can surmise the part of it that's true.  
Perhaps we sign an order, which leaves him all aglow,  
And makes him feel it's worth a deal to exhibit at the Show.

—Frank Adams Mitchell.

To the ninth big Cement Show.

Farewell Nineteen-fifteen

Exhibitors, don't cry!

We will all be back in Nineteen-sixteen.

Cement Show—Good-bye!

At the annual meeting of the Security Cement & Lime Co., Hagerstown, Md., H. A. Cover, formerly treasurer, became president of the company, living at Baltimore as heretofore.

L. A. Kling, of the Wheeling Mold & Foundry Co., of Wheeling, has a great story to tell in connection with delivering the carload of crushers he exhibited at the Cement Show. Shipment was scheduled from the factory for Monday, Feb. 1, allowing nine days to get the shipment to Chicago. The Ohio river is noted for its flood rampages, and as fate would have it, the snow that had covered the mountains through Pennsylvania and West Virginia melted on Sunday and came down the river with a 40-foot flood stage. A new complication arose. Wheeling was cut off from all but one outlet to Chicago, and that by way of Pittsburgh and Cumberland Junction. The delivery that was scheduled for nine days would have taken three weeks. Mr. Millard, traffic manager for the Wheeling Mold, left his desk with the shipment, followed it through a district where the tracks were partly covered with water, and by a circuitous route landed in Logansport, Ind., on Friday evening of the same week. The car on which the crushers were loaded jumped the track once, was stopped for repairs

twice, and still landed in Chicago, with Millard riding it, on Saturday morning, exactly 96 hours out of Wheeling. The above is typical of the Wheeling way of doing business. Their success has been based on fulfilling promises and living up to schedules.

James Leenhouts, manager, Grand Rapids Plaster Co., Grand Rapids, Mich., accompanied by Brother James, was over attending the hearing of the Interstate Commerce Commission in Chicago, and enjoyed the fellowship of his customers at the N. B. S. A.

B. H. Rader has never missed a cement show since the start at Indianapolis 10 years ago. Always debonair on every occasion, he is a thorough cement man, and presides over the Eastern sales office of the Universal Portland Cement Co. at Pittsburgh.

John G. Evans, representing the Marquette Cement Mfg. Co., when he was asked recently what had become of Gold Williams, the genial sales manager, remarked that he had just returned from a visit to the President at Washington and the Lord said there should be light—and there was light; it was Presbyterian light, Charles P. Light, of the American Road Congress, his gloves and his cane in his hand, all mixed together, hence new Apostles of Light and better roads were engrossed on applications for the association.

# Retailers of Nation Hold Enthusiastic Meetings

Sixteenth Annual Convention of National Builders' Supply Association Featured by Interesting Papers—J. H. Allen Elected President.

Monday and Tuesday, Feb. 8 and 9, were banner days for the National Builders' Supply Association. During the two days retailers of building materials from all parts of the country assembled at the Sherman hotel, Chicago, for their sixteenth annual convention. From the moment President Ed. K. Cormack called for order until the exit of the last banqueter on Tuesday evening, there was something of interest which kept enthusiasm high and attendance at the meetings almost perfect. Not only were retailers present at this convention, but manufacturers and their representatives were also there in large numbers, all interested in the uplift of the industry and in the coöperation of manufacturer and dealer.

## President's Address Features First Session.

The first session was held in the association meeting room on the first floor of the Sherman house, Monday, with President Ed. K. Cormack in the chair and Secretary L. F. Desmond holding his pen in hand. The president's address was received heartily, because it contained a few truths which might have long ago been buried in the intricacies of the builders supply dealers' problems. He spoke as follows:

A year ago I accepted the office of president of this association with fear and trembling, not knowing what was expected from me, much less knowing what to do, or how to do it. As the work of the association became more familiar, as I corresponded with and talked with various members from all parts of the country, I realized as I never did before, the importance of our association, and the power for good it could be if properly supported and managed. I saw and felt the need of it, and wondered why others did not view it as I did, nor could I understand why they should look upon it with indifference, unless it was from a lack of knowledge of what the association stood for, and what it was trying to do.

Thinking along these lines, the first thing we did was to endeavor to arouse among the dealers of the country a knowledge of and interest in the work of the association, and to do this it became necessary that we go before the dealers with some kind of a tangible program—a program for which we could confidently demand their support. Accordingly at the mid-summer meeting of the directors, held in this city, it was decided to announce to the dealers throughout the country that the program which our association was working towards is as follows:

To foster a policy of co-operation between manufacturer and dealer for extending the demand for and sale of building material.

To secure from the manufacturer recognition of the truth that the logical channel for his output to reach the consumer is through the dealer.

To assist in promoting sentiment which will materialize into legislation permitting the standardization of prices.

To work for uniform lien and collection laws.

To furnish free of charge to our members:

First. A simple accurate costs system installed by the association's auditor to enable the supply man to know from day to day what it costs to do business.

Second. A consulting engineer to plan and design yards and warehouses so that they will be 100 per cent efficient.

Third. The services of a lawyer of national reputation who will counsel on matters of interest to our whole membership.

This program was printed and distributed from one end of the country to the other. In all, about 100,000 copies were sent out, and to each copy was attached an application blank. We did not appeal exclusively to those selling only one kind of building commodity, but we appealed to all those dealers who were handling anything required by the concrete, mason, plastering and municipal improvement contractors. Our program was copied in the various trade journals, appealing to the various interests catered to by these journals, and while we are unable to point to a large increase in the membership from this effort, yet I feel confident—and this convention is proof of our confidence—that it aroused the interest in the association which had been lacking.

Your president personally endeavored to carry out the platform as announced in the program, and in correspondence and interviews with the manufacturers of the various kinds of building supplies, found them willing to admit the truth of our statement that the logical channel for the manufacturers output to reach the consumers is through the dealer, providing that the dealer will co-operate with the manufacturers in endeavoring to increase the demand for their various commodities, and this the dealer must do—he must cease to be a warehouse and leasing proposition—he must become a merchant, with a merchant's aims and ambitions, and by means of promotion bureaus which will be brought to your attention later, increase the demand for the wares he is merchandizing.

The manufacturer is beginning to realize the selling power of a properly organized association, doing team work, and as an example of this—

It was my privilege not so very long ago to have an opportunity of examining the records of a very large manufacturer of a certain class of building material—a material which is oftentimes sold direct as well as through the dealer. This particular manufacturer had been convinced that the dealer policy was the logical one for the permanent upbuilding of his company, and during the year 1914, 92 per cent of his output was distributed through the dealer, and what is even a more striking confirmation of the truth we seek to drive home is the fact that the shipments of this particular manufacturer exceeded those of any other manufacturer of a similar line for the same year.

While on this subject I wish to direct attention to, and especially commend the new selling policy recently put into effect by the Portland cement manufacturers. In this connection we advised the dealers to keep in step, as it was impossible for them to expect the manufacturers to continue offering something that was not acceptable or taken advantage of.

We have been in correspondence with trade associations of various kinds located in different parts of the country, working with them in endeavoring to create a sentiment which will result in the legalizing of the standardization of prices. I personally am convinced that the salvation of the dealer in building supplies, as well as the distributor of any commodity, lies in the standardization of prices, and while this is not the proper time to talk on this subject, yet I may be pardoned if I say that this association could well afford to devote a great deal of its time and money in working with other associations to bring this result about.

This association should take an active, intelligent, non-partisan interest in the political welfare of the country. The soldier and the lawyer have both had their day in endeavoring to legislate for the good of humanity—the one by force—the other by theory. The evolution of political development points to them both being superseded by the level-headed, fair-minded, practical, successful business man or merchant. Let us do what we can to hasten the arrival of the "Merchant in Politics."

We have spent considerable time in investigating the various forms of trade credit associations, and in combining what we consider the best from each, and urging upon our membership throughout the country the importance of the dealers in each locality being organized on what might be known as the credit and promotion bureau plan.

We are prepared to furnish the dealers of the country a uniform cost system. We say uniform, because we feel assured that a cost system to be of any benefit to the individual and the trade must be uniform with that of his neighbor.

An adoption of and carrying out of a uniform cost record would do more than any other one thing to reduce the present ruinous policy of cut price competition.

Just as the banks now demand from their customers a financial statement as a basis on which to extend credit, so the modern, wide-awake manufacturer will demand that his customer keep cost records and refuse to do business with the man who robs Peter to pay Paul, and guesses at the margin of safety.

I am in hope that at some time in the near future we may have permanently on our staff an experienced cost finding auditor whose duties will be to visit the establishments of our members and assist them in installing a uniform cost system.

By means of rigid economy we have been enabled to reduce the indebtedness inherited from the past, and if the plan of the reorganization, which will be submitted to you later during the convention is adopted, the association will not have to exist upon what might be called a postage stamp income.

My year's work as president of your association draws to a close with the firm and binding conviction that there is a great need for the useful work that this association could do—that this association is needed by the manufacturer, by the dealer, by the contractor, and by the building trade mechanic, and that the lack of actual results which may be charged against us is due entirely to the indifference or lack of faith of the larger part of its members, and those who ought to be members, to the aims of the association, and to the efforts of its officers for the benefit of its members.

Our membership must realize that an association only gives to those who give to it and that in accordance with what you do for the association, the association will do for you. It is useless for the dealers throughout the country to complain of existing conditions and say that they would like a remedy, and then when asked to work for and sacrifice a little so as to secure the remedy, to peevishly murmur, "It can't be done. What's the use?" The dealers have got to be animated by what might be called the spirit of enlightened selfishness—a selfishness that has breadth and fairness of vision to understand that no one can live to himself alone—that no man can hog the market, and that what he does to better the other fellow's condition, automatically benefits himself, and that this applies not only to his neighborhood competitors, but applies with equal force to his colleagues in other cities. You cannot improve conditions in Chicago and have them bad in Milwaukee—what affects one affects all—and you must all stand or fall together. And just as they pay insurance for the purpose of protection, so must they contribute to and loyally support an association such as this, as a matter of personal protection.

Your directors have given a good deal of thought as to how the interest of the dealers may best be conserved and their energy awakened, and at a later period during this convention, a full, comprehensive and detailed plan will be submitted to you—a plan which has been analyzed from every viewpoint, and is brought to you with the hearty endorsement of all to whom it has been submitted, and who have made a study of conditions sought to be improved by trade organizations, and it remains for you, gentlemen, now in convention assembled, to say whether you will go forward on a solid basis—a national force for good, accomplishing what it sets out to do—or whether you prefer to strive as you have been doing, grumbling at your fate, and, like Micawber, wait for something to turn up.

During the past year final arrangements were perfected for the affiliation with the National of the Ohio Builders' Supply Association, at a meeting held by the latter organization in Cedar Point, Ohio, Aug. 7.

In September, the dealers in the states of Delaware, Maryland and the District of Columbia formed a tri-state organization which is now known as the "Del-Mar-Col Association." This association also voted to affiliate with the National on the same basis as did the Ohio, and while this basis for the present method of affiliation is not entirely satisfactory to my personal views, yet this action on the part of two associations mentioned above is evidence of the desire cropping out all over the country for a strong organization of dealers, and during this convention it is desired that this whole question of local, state, district and national organizations of dealers shall be constructively discussed and permanently settled.

I wish to make official mention of the loyalty and coöperation I have received from your board of directors. Never a president has received more cordial support than I have had. I also wish to thank the numerous privates who in various parts of the country have encouraged me by word and pen. Particularly do I desire to thank Mr.

## The Logical Protector.





Foster for the faithful and energetic work he has done as a field secretary. A few men like him would put our convention in the front rank of trade associations.

The various trade journals, and especially ROCK PRODUCTS AND BUILDING MATERIALS, have freely given us of their time and space, and in the handbook which has been distributed you will find tangible evidence of how our friends, the manufacturers, feel toward the "N. B. S. A."

In conclusion, permit me to say that I do not believe that at any time in the history of this association was the time so favorable as it is at present for us to get down to a sound, practical business basis. Those whom we cannot get along without, and whom we think cannot get along without us, are ready to assist in the work, and in the broad-minded spirit of equal rights to all and special privileges for none, are ready to help make the National Builders' Supply Association one of the foremost trade associations in the United States, an association membership in which will fix a man's standing in the industry and which will be eagerly sought for and valued and prized as indicating the hallmark of a modern, progressive merchant, one who has a pride in his business and the service he renders to the community by the manner in which he conducts it.

Opportunity is knocking at our door. Will you let her in?

Secretary Desmond, in diagnosing the membership as it was and as it is, stated that there are 250 members in good standing, and that the financial transactions of the association showed practically the same kind of a balance as we had 12 months ago, much aggressive and effective work being done in that time.

#### Monday Afternoon's Session.

Mr. Foster of Cincinnati was introduced to speak on "Anti-trust Legislation and Its Effect on Association Work." Some of his remarks were:

Some of the laws recently enacted are new departures. Opinions as to new Federal anti-trust laws are diverted and people differ as to their interpretation.

Within two to ten years in this country, there have been developed two theories as to the so-called trust problem, which should be dealt with. One theory is that monopoly is a good thing in certain instances and should be encouraged. This was advanced by one of the political parties during the last presidential campaign. Another party thinks that monopoly is a bad thing and must be done away with; this is the theory on which the new Federal anti-trust laws are to be put in force. The Federal trade act is the first trust measure enacted by the present Congress.

We have had prior to this, what we call a Bureau of Corporations, which has been in existence several years. That was incorporated primarily in the Department of Labor to give Congress expert advice, statistics and facts upon which to base future legislation.

It shall be the duty of this new commission to prevent unfair competition. This trade commission has authority to determine what unfair competition is.

Under the new Federal Trade Commission Act, if an organization violates the anti-trust law, complaint must be filed by the commission, prosecuting witness being the commission and the judge also being the commission; they will file a complaint, which will be served on the accused company or corporation within 30 days, or at some fixed date, when they must appear to show cause why they have not violated the law. Then the Federal Trade Commission, sitting as judge, has the right to determine whether or not the law has been violated, and if it has it becomes the duty of this trade commission to make out a statement of facts. That is very important to my mind. If found guilty, the commission issues an order forbidding the accused corporation to do what it has been doing.

The corporation has the right to appeal its case to the Court of Appeals of the United States for a review of the facts. In a Federal case these five men sitting in judgment have the whole say in the findings of the facts and nobody can say them nay, but there is not a court in the land which has authority to change their judgment, if there is any evidence to support it.

The primary object of this Federal Trade Commission is to prevent combinations in restraint of trade.

So far I have demonstrated in this act that the commission must prevent unfair competition and they have the right to say what it is, and there is no appeal from the facts I have outlined. Further on the act goes on and specifies, and here is where it will hit most everyone of you who perhaps are interested in large business and corporate enterprises. The commission has authority to investigate and compile information regarding the organization, business practices and the inter-relationships of corporations, and go right into a man's place of business, look through the books and records and get everything they want.

Now in addition to that to further that same line of thought the next section in the act says this commission can compel either by general or special orders a special or annual report from any corporation engaged in business in this country, either by general order sent out to all corporations throughout the country, or something special to go to two or three companies. They have the right to send a blank, like the internal revenue commission does now, and you must answer questions pertaining to your business under oath.

This commission has a further power, and this perhaps is a good one, at least from the standpoint of everyone else except those it hits. You men have read no doubt and thought considerably about the dissolution of the Standard Oil Co. and the American Tobacco Co. You will recall that lots of people and business men stated that was made only on paper. The court does not go out and seek facts and see if the decrees are being carried out; it does not have time. This commission has the right by its own initiative, if it has cause to believe that a decree of the court in regard to an anti-trust law is being violated, to make an investigation itself and report to the United States for action. It is a safeguard and watchdog for the courts' decree.

On the other hand, if the Attorney General believes that such a violation of the decree has taken place, he will suggest to the trade commission, and the trade commission will go ahead, investigate and report for action.

This whole idea of the Federal Trade Commission has grown out of the Interstate Commerce Act. I think every man in the past 15 years who has studied the

financial and economic condition of this country will admit that the Interstate Commerce Commission has been the savior of our business. They have by their own investigation into railroad and transportation problems, spelled many a hard word in business transportation. They have presented many things that railroaders never dreamed of, and have formed a guiding light for railroads, so when confronted with some unusual proposition the railroad officials and attorneys have some place to go to find out something accurate, which they can do through the commission.

It is hoped and planned that the Federal Trade Commission will be full of business knowledge, statistics and other matters of great value to our business public. I believe that will work out; I think there are so many loopholes and dodges in this act that much of it can be evaded. The information which it will elicit will be of great benefit to us all. There has been a great deal of criticism of this act because it exposes private business to public gaze. That is optional with the commission, except on one or two points. They cannot disclose your trade list, customers or trade secrets. They have to use their own judgment after that.

This interstate trade act gives the commission power to investigate business in foreign countries, and our relations with business in foreign countries, and especially where there is a monopoly.

Mr. Foster touched at some length on the Clayton bill, also the Sherman anti-trust law, and his remarks were received with enthusiasm and applause.

#### Business Man Should Enter Politics.

President Cormack, in commenting on Mr. Fos-



JAMES H. ALLEN, PRESIDENT, NATIONAL BUILDERS' SUPPLY ASSOCIATION.

#### Co-operation.

Rally 'round the flag, boys!

Rally once again!

Jim Allen is our president—

Let's back him.

ter's splendid talk, said that business men should take an interest in politics with a view of holding office and representing commercial lines. In this way they could understand laws which are passed affecting their industries.

#### Need of the N. B. S. A.

The next subject for discussion was "The Need for a National Builders' Supply Association, and the Best Way to Accomplish It." Along this line President Cormack said:

It has been amusing and instructive to listen to the tales of woe which the dealers attending have made in regard to the evils affecting their particular business. There is not one of them, from the man who is running what might be called a corner cement and supply store to the man who runs 150 teams and 20 auto trucks, who does not say that business is shot to pieces, brought about by unfair competition, which exists in every nook and corner of the land. So we will admit that there is an absolute need and necessity for an organization which will help the dealer to save himself from himself. The

work to be done in this connection is very great, and while there may be a great variety of opinion in regard to the best manner in which it can be done, yet your board of directors has during the past six months made a very careful and earnest study of this situation, and investigated the proposition of how other trade associations have remedied the evils which have affected their industries.

The National association as it has been existing is not properly equipped—not properly organized—to accomplish the work which it is expected to accomplish. We have not been able to do the instructive work which is required to be done and which I am positive could be done by closer co-operation. The National association, as it exists today, has been hampered by two things; first, a lack of membership, and second, a lack of funds. We have not been able to go before the country and show the dealers what we can accomplish for them, because we did not have the funds to do it, and we have been unable to get the dealers into our fold because we were unable to show them that we could accomplish something for them.

Even those who are occupying the most prominent positions in the building material industry need the benefit of educational work. Then if this be true, how much more true is it that those who are not so fortunately situated should be brought into contact with the men who sort of need the benefit of educational work. In talking this question over with one of our prominent members, I likened the situation as regards the labor element on the Pacific coast, the white versus Chinese labor, to conditions existing in the building material industry at the present time. The objection is not against these competitors on the ground that they are of a different race, but that they will not live up to the level of the white man, but that the Chinese want to bring the white man down to the level of the coolie laborer.

That is the exact situation in the builders' supply business. It remains for those in this business who are endeavoring to conduct their business on what might be called a higher plane, to decide whether you are going to permit the other fellow to drag you down to his own level or whether you will bring him up to your own level by education and co-operation.

#### Local Associations Necessary.

In this connection and feeling the need of educational work, your board of directors came to the conclusion that the logical way of assuring success was to organize throughout the country local associations of building supply men; locals which will be working under the guidance and direction of the National association, and organized under a promotion and credit bureau plan. There is not a builders' supply man here who does not know the good to be derived from a credit association arrangement. We have tried different forms of credit systems, but they have not worked satisfactorily.

There is another thing which the locals must work on, and that is the promotion end of the business. It is not sufficient for a builders' supply man to take the products of the manufacturer and stick them on his shelves and leave them there until a consumer comes along and asks for them. He must work with the manufacturer for the increased use of his product. Your board of directors in looking into this situation and that a campaign of education along these lines would secure the hearty support of every manufacturer of builders' supplies.

Our legislators have compelled the railroads to quit rebates. The same people have approved the policy of the labor unions in standardizing their wage scale. With properly organized locals throughout the country, working on one hand with the manufacturer or source of supply, and on the other hand with the contractor or the outlet of the supplies, I am positive that the dealers' position throughout the country could be made much pleasanter.

If you are in earnest for a strong National Association which will fight your battles and help you make your collections and promote the use of your products, you will have to dig down in your pockets.

President Cormack referred to the cartoon in DAILY ROCK PRODUCTS AND BUILDING MATERIALS of Feb. 8, and which is reprinted in this issue, and said if we put this association where it belongs the little boy will be eating the turkey (representing trade evils) instead of running away from it. Continuing, Mr. Cormack said:

Your board of directors was in session all day yesterday, and the result of the conference is as follows: We feel that the dues as at present assessed are not worthy of the name of dues, and we feel that the members should contribute on the basis of the amount of business they do, the new plan to be put into effect January, 1916. When these dues go into effect it will give the association revenue to carry on the work it has planned to do, but inasmuch as the greater portion of the dues for 1915 have been paid, the new plan will not go into effect until January, 1916. It remains for those who have the interests of this association at heart to pledge themselves in sufficiently large sums so that the work can be undertaken immediately of organizing the country into locals.

President Cormack's remarks did not fall on barren ground, as evidenced by the fact that numerous members present pledged themselves to contribute varying sums for the next three years to carry out the objects outlined by the chairman.

E. H. Defebaugh, editor-in-chief of ROCK PRODUCTS AND BUILDING MATERIALS, outlined for the benefit of the members what the yellow pine interests had done to promote the use of their product, stating that they were spending five cents per thousand feet for a series of years to conduct an educational campaign. The speaker also demonstrated how individuals could benefit by joining a national association, and urged the members to put the association on a firmer basis or the result would be that they would have some more lean years, probably worse than those which they had experienced in the past.



"The manufacturers in the builders' supply business have told me," said Mr. Defebaugh, "that they would be glad to co-operate with the members of the National Builders' Supply Association to make the organization the greatest in the building material line in the country, but they want the dealers to do their share."

President Cormack stated that the money subscribed would be wisely and judiciously spent in organizing the country into local associations, and that those who pledged themselves for any given amount would be given an opportunity to elect a committee to handle the disbursements.

#### Tuesday Morning's Session.

Tuesday morning's session of the National Builders' Supply Association was called to order at 10:30 a. m., with President Cormack in the chair. In opening the meeting he said: "There is a question confronting the dealers; that is the value of the tests on the materials which he handles and sells." H. H. Morgan, of the firm of R. W. Hunt & Co., was then introduced to address the convention on "The Value of the Testing of Materials from the Dealer's Standpoint." The paper will be printed in a later issue of ROCK PRODUCTS AND BUILDING MATERIALS.

John M. Glenn, secretary of the Illinois Manufacturers' Association, addressed the association on "A Business Man for President."

F. L. Davidson was the next speaker who treated the topic, "The Ideal Material Yard and How to Make It 100 Per Cent Efficient."

The next speaker introduced was Edward Sheasgreen, who spoke on "A Uniform Cost Finding System for the Building Supply Dealer."

The next thing on the program was the motion picture film showing "Gypsum, from the Mine to the Wall," after which the convention adjourned, to convene again at 2:00 p. m.

#### J. H. Allen Chosen President.

The first thing on the program at the afternoon session was the election of officers, with the result that the following officers and directors were elected:

President, J. H. Allen, Nebraska Material Co., Lincoln, Neb.  
Treasurer, John J. Voelkel, J. J. Clarke Co., New Orleans, La.  
Directors—  
N. H. Parsons, Parsons Lumber Co., Rockford, Ill.  
W. H. Pipkorn, W. H. Pipkorn Co., Milwaukee, Wis.  
C. N. Ray, United Fuel & Supply Co., Detroit, Mich.  
W. A. Fay, Cuyahoga Bldrs. Supply Co., Cleveland, Ohio.  
A. E. Bradshaw, Indianapolis Mortar & Fuel Co., Indianapolis, Ind.  
W. W. Coney, Moores-Coney Co., Cincinnati, Ohio.  
C. M. Kelly, James C. Goff Co., Providence, R. I.  
D. J. Kennedy, D. J. Kennedy Co., Pittsburgh, Pa.  
Vice Presidents—  
A. C. Davis, Montgomery Lime & Cement Co., Montgomery, Ala.  
W. L. Clippard, Little Rock, Ark.  
S. Dana Lincoln, National Mortar Co., Washington, D. C.  
W. W. Nicol, Peoria Fuel Co., Peoria, Ill.  
Harry Rogers, A. P. Keppert & Co., Indianapolis, Ind.  
Frank Perkins, Des Moines Lime & Fuel Co., Des Moines, Ia.  
B. H. Michel, Salmen Lbr. & Brick Co., New Orleans, La.  
Wm. A. Rabbe, Kenton Supply Co., Covington, Ky.  
Harry Boyd, National Building Sup. Co., Baltimore, Md.  
R. H. Whitney, B. F. Marsh Co., Worcester, Mass.  
S. A. Morman, S. A. Morman & Co., Grand Rapids, Mich.  
R. E. Bost, Natchez, Miss.  
Ambrose Tompkins, Tompkins Bros., Newark, N. J.  
H. Hamilton, Buffalo Bldrs. Supply Co., Buffalo, N. Y.  
F. C. McCaffrey, McCaffrey Bros. Co., Wheeling, W. Va.  
T. Marston, W. L. Macatee & Sons, Houston, Tex.  
W. W. Fischer, Fischer Lime & Cement Co., Memphis, Tenn.  
A. C. Gower, Greenville, S. C.  
Edwin D. Allen, Manchester & Hudson Co., Providence, R. I.  
Harry A. Moore, De Frain Sand Co., Philadelphia, Pa.  
R. E. DoVillie, DoVillie Sand & Gravel Co., Toledo, O.  
B. H. Withers, Charlotte, N. C.  
J. L. Mitchell, J. L. Mitchell Co., Atascadero, Cal.  
M. Mannan, Mannan-Smith Supply Co., St. Joe, Mo.  
F. H. Johnston, City Coal & Wood Co., New Britain, Conn.  
A. H. McCarrel, Augusta, Ga.  
H. D. Maitland, Colorado Bldrs. Sup. Co., Denver, Colo.  
C. J. Adams, Adams Bros.-Paynes Co., Lynchburg, Va.

The following resolutions presented by Mr. Frank Kinney, were then passed.

Resolved, that we, the National Builders' Supply Association, in convention assembled at Chicago this ninth day of February, 1915, Chicago, Illinois, do con-

demn the acts of the city council and state legislature, in legislating against the use of vitrified pipe for house drain purposes, and that we also condemn the acts of boards of health in municipalities and states in passing rules and regulations eliminating vitrified pipes for house drain purposes.

Resolved, that we, the National Builders' Supply Association, in convention assembled at Chicago this ninth day of February, 1915, Chicago, Illinois, do favor the passing of ordinances by municipalities and laws by state legislatures, compelling better and safer flue and chimney construction, thereby reducing the fire hazard, which adds to the "Safety First" movement.

The first address of the afternoon session was "Team Work in Selling," by W. H. Price, advertising manager of the U. S. Gypsum Co., Chicago. It will be printed in full in the next issue.

#### President Allen's Inaugural Address.

A committee then escorted the new president, J. H. Allen, to the chair. He was called upon for a speech, and said, in part:

I do not know any reason why they should have elected me president of the National Builders' Supply Association. The work that is to be done or that should be done by this association is really something that I cannot do myself. Mr. Cormack has not had



PRESIDENT CORMACK ON THE JOB.

the money to do the work as it should have been done; and I do not know where we are going to get enough money to organize the building material dealers of the United States. When a man looks over the map of the United States it is "some" map; and to try and get acquainted with all the building material men in the United States—well, I do not know how he is going to do it. It is very hard to get the building material men to see the problems that are coming up before them in the light that the directors of the National Association and President Cormack have seen them; and in doing this work we are trying to do it for a purpose, and it has been very hard to get enough money from the members of the association to back it up.

We have been working to raise money so as to put out enough men to try and do the different things that we would like to do. There is not a building material man in the United States, I do not believe, who is making any money. All building material men in the United States have the same troubles; the manufacturers go into your towns, sell stuff direct and there are so many things they are doing and so many things you cannot do, that it is very hard for any one to outline any policy or system that will protect the dealers and the only way we can do it, is through organization. The first thing we have to do is organize the association in such a way throughout the United States that every building material man will be protected in some way.

We are going to try and line up a system and I think with the aid of E. H. Defebaugh we will be able to line up some system of work if we can get the members in the association to take enough interest in the organization and its work to go out and boost for the National Builders' Supply Association. You will find at the end of the year that the National Association need not fear manufacturers, but will have them working with us; a great many of them are working with us now and endeavoring to help you, but you will not help yourselves. If the building material man would realize that the manufacturer is doing what he can to protect them, I think they would get their shoulders to the wheel and try to do more to build up the National Builders' Supply Association and local organizations throughout the country. The lime manufacturers are organized in most every section of the country; they are protecting the dealers all over the country, and I think it is due to the fact that they are better organized. The plaster manufacturers are protecting the dealers and the cement people have been protecting the dealers; but at this time they are not in position to do so. I will do the best I can and endeavor to build up the National Builders' Supply Association and I will give it as much time as it is possible for me to give it.

Samuel O. Dunn, editor of the "Railway Age Gazette," spoke at some length on the subject of

"Railroads and the Dealer," and his paper, which was very interesting and full of meaty suggestions, was very much enjoyed.

The next number of the program was an address under the title of "The Necessity for Legislation Permitting Price Standardization," by Sol Westfeld, chairman, trade relation committee of the National Association of Retail Grocers.

Floyd E. Waite, of the Society Advocating Fire Elimination, Cleveland, spoke on "Relation of Fire Prevention to the Builders' Supply Trade." Mr. Waite's paper was very interesting, and he spoke very enthusiastically regarding the society, urging that all the builders' supply men become affiliated with it, for their own good, as well as for the good of all.

The meeting of the year then adjourned, but the dealers were urged to assemble again at the banquet.

#### The Annual Banquet.

The sixteenth annual banquet of the National Builders' Supply Association was attended by 300 people. President Cormack presided and the honorary guests at the board were: Prof. Van Hise, of the Wisconsin University, of Madison; Newly Elected President J. H. Allen, Lincoln, Neb.; Treasurer J. J. Voelkel, New Orleans; L. W. Macatee, Houston, Tex., and Gordon Willis, of St. Louis; B. F. Affleck, Chicago; W. W. Coney, Cincinnati, O.; C. N. Ray, Detroit, Mich., and A. Y. Gowen, Chicago.

The address of Prof. Van Hise impressed on the audience so clearly that coöperation is not a crime but an honorable method for men to use in working out their problems that each man went home with the assurance that commercial life is not made up of "skulawags" and law breakers, but with the determination to look every politician in the face and tell him to go to Timbuctoo.

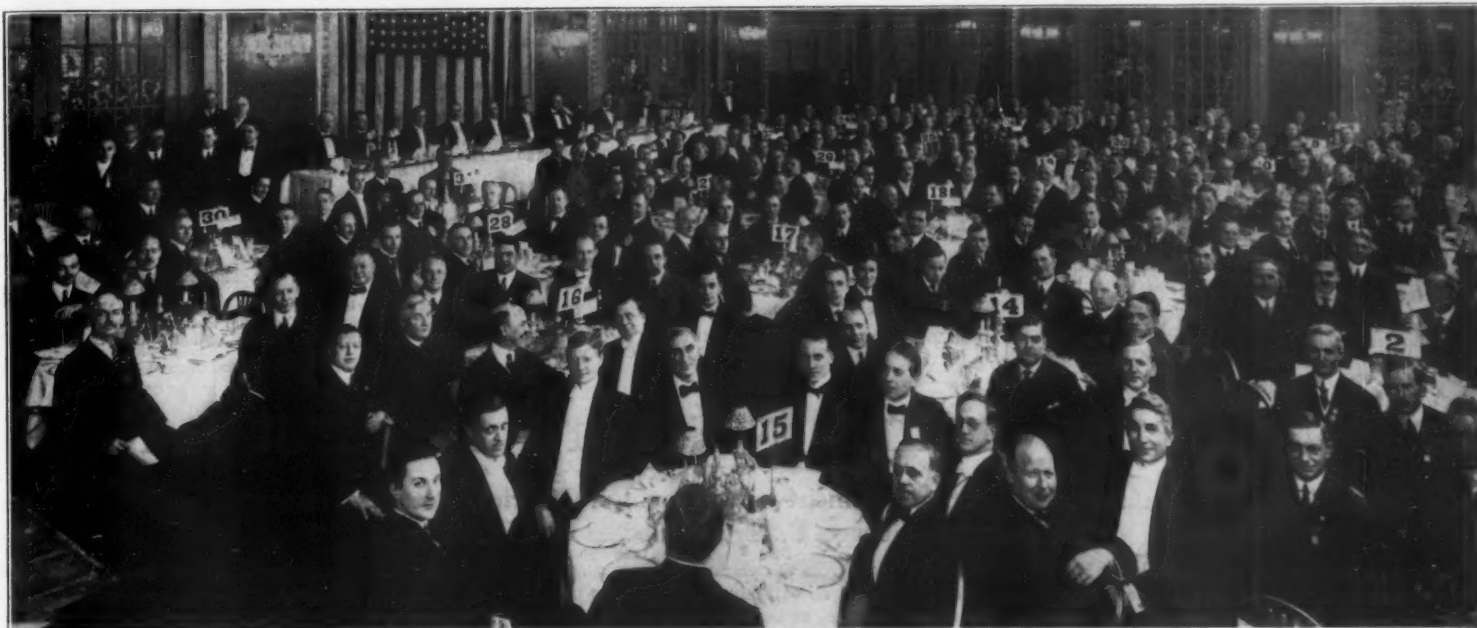
B. F. Affleck, recently chosen president of the Universal Portland Cement Co., made a happy little address in acknowledgment of a beautiful bouquet of roses presented him by the association and later in the evening A. Y. Gowen spoke, in response to some very attractive remarks by Eddie Orr, toastmaster of the social end of the program and auctioneer of the best acts—and who, by the way, leads the great Chamber of Commerce singers, making life one joyous occasion jointly with the gentlemen singers and in coöperation with a galaxy of beauty who entertained by song and dances until the late hours. Mr. Gowen's assurance of coöperation, financially and otherwise, with the newly rejuvenated N. B. S. A. added another spoke to the friendly wheel of progress of the Lehigh, as well as giving new encouragement to the willing workers for the good of the cause and the advancement of the building material business on better lines.

#### Association's "Hindquarters."

One feature of the convention which will long be remembered by every builders' supply man was the Association's "Hindquarters." At "Headquarters," matters of grave importance dwelling on the welfare of the Association were discussed, while the "Hindquarters" paid attention to the comforts and pleasures of the individual. Music, reading matter, cigars, food, thirst-quenching liquids and other incidentals necessary to the complete enjoyment of convention attendants were furnished in the two rooms in charge of the entertainment committee, of which Frank Adams Mitchell was chairman.

#### Registered N. B. S. A. Attendance.

W. P. Whitney, Alton Brick Co., Alton, Ill.  
Adams Bros. & Byrnes Co., Lynchburg, Va., C. L. Adams.  
Howard B. Arnold, Dayton Builders' Supply Co., Dayton, Ohio.  
A. J. Armstrong, Plymouth Gypsum Co., Ft. Dodge, Iowa.  
J. H. Allen, Nebraska Material Co., Lincoln, Neb.  
J. C. Adams, United Fuel & Supply Co., Detroit, Mich.



NATIONAL BUILDERS' SUPPLY ASSOCIATION BANQUETTERS CAUGHT IN THE ACT.

Harold W. Becker, Wheeling Wall Plaster Co., Wheeling, W. Va.  
 A. N. Bwardanger, Toch Bros., New York and Chicago.  
 W. H. Bassler, Masons Specialty Co., Chicago, Ill.  
 E. W. Barrows, Kelley Island Lime & Transport Co., Cleveland, Ohio.  
 John F. Baldwin, McCrady Bros. Co., Braddock, Pa.  
 M. J. Brennan, Amalgamated Roofing Co., Chicago, Ill.  
 Arthur R. Black, American Gypsum Co., Port Clinton, Ohio.  
 J. B. Blanton, J. B. Blanton Co., Frankfort, Ky.  
 S. N. Patties, Standard Builders' Supply Co., Grand Rapids, Mich.  
 P. P. Bergeron, Union Fibre Co., Winona, Minn.  
 A. E. Bradshaw, Indianapolis Mortar & Fuel Co., Indianapolis, Ind.  
 Douglas Banfield, ROCK PRODUCTS AND BUILDING MATERIALS, Chicago, Ill.  
 G. R. Cobb, General Fireproofing Co., Youngstown, Ohio.  
 P. R. Clark, General Fireproofing Co., Youngstown, Ohio.  
 Edward K. Cormack, Wisconsin Lime & Cement Co., Chicago, Ill.  
 Geo. T. Calvert, J. Calvert's Sons, Detroit, Mich.  
 Clyde C. Crane, U. S. Gypsum Co., Chicago, Ill.  
 James Cunat, Chicago Fire Brick Co., Chicago, Ill.  
 H. M. Clemens, Cannellton Sewer Pipe Co., Cannellton, Ind.  
 W. E. Cobean, Wolverine Portland Cement Co., Coldwater, Mich.  
 John A. Connelly, Thomas Connelly Co., Chicago, Ill.  
 C. Elmer Cary, Clinton Wire Cloth Co., Chicago, Ill.  
 Jas. S. Christpin, Jas. S. Christpin Lime & Cement Co., Cincinnati, Ohio.  
 W. W. Coney, The Moores-Coney Co., Cincinnati, Ohio.  
 S. Crown, Chicago Fire Brick Co., Chicago, Ill.  
 C. W. Capes, J. B. King & Co., Buffalo, N. Y.  
 Geo. F. Cornell, Chas. Warner Co., Wilmington, Del.  
 Walter S. McCammon, L. H. McCammon Bros., Cincinnati, Ohio.  
 J. H. Dalbey, Dixie Portland Cement Co., Chattanooga, Tenn.  
 Raymond E. DoVillie, Ohio Builders' Supply Association, Toledo, Ohio.  
 John Davies, Empire Wall Plaster Co., Utica, N. Y.  
 H. F. Dowd, Atlas Portland Cement Co., Chicago, Ill.  
 Walter G. Dutton, Copley Cement Mfg. Co., Philadelphia, Pa.  
 E. H. Defebaugh, ROCK PRODUCTS AND BUILDING MATERIALS, Chicago, Ill.  
 A. Y. Gowen, Cleveland Builders' Supply Co., Cleveland, Ohio.  
 Charles Englehardt, A. S. Rosing, Chicago, Ill.  
 J. O. Freeman, Northwestern Clay Mfg. Co., New Windsor, Ill.  
 W. M. Fischer, Fischer Lime & Cement Co., Memphis, Tenn.  
 W. A. Fay, The Cuyahoga Builders' Supply Co., Cleveland, Ohio.  
 Fred W. Fogarty, Crouse Clay Product Co., Akron, Ohio.  
 E. A. Foster, Samuel Cabot, Inc., Boston, Mass.  
 Claude W. Filer, National Plaster Board Co., Cleveland, Ohio.  
 J. E. Finnerty, East Side Lime & Cement Co., St. Paul, Minn.  
 H. F. Glazier, General Fireproofing Co., Chicago, Ill.  
 Hector W. Gordon, The Gordon Hittl Co., Boston, Mass.  
 C. F. Graves, Baker & Holmes Co., Jacksonville, Fla.  
 Geo. S. Hird, Mitchell Lime Co., Mitchell, Ind.  
 Lawrence Hitchcock, Kelley Island Lime & Transport Co., Cleveland, Ohio.  
 C. H. Hoppe, Thomas Connelly Co., Chicago, Ill.  
 C. Hatfield, Panama-Pacific Exposition, Chicago, Ill.  
 Eltha Harpham, Buckeye Sewer Pipe Co., Akron, Ohio.  
 P. L. Hill, Chicago Fire Brick Co., Chicago, Ill.  
 H. L. Hutson, H. M. Reynolds Asphalt Shingle Co., Grand Rapids, Mich.  
 N. A. Ainsor, The Heppes Co., Chicago, Ill.  
 Wm. V. Heinz, Church Appliance Mfg. Co., LaSalle, Ill.  
 G. A. Hinder, L. A. Hinder & Co., Angola, Ind.  
 Robert F. Hall, Universal Portland Cement Co., Chicago, Ill.  
 E. J. Holway, Youngstown Ice Co., Youngstown, Ohio.  
 W. W. Harder, Wm. G. Hartfrant Cement Co., Philadelphia, Pa.  
 R. D. Hutton, Laclede-Christy Co., St. Louis, Mo.

H. E. Hughes, General Fireproofing Co., Youngstown, Ohio.  
 Clarence J. Hunt, Wadsworth Howland & Co., Boston, Mass.  
 J. B. Hart, Canada Crushed Stone Co., Dundas, Ont., Canada.  
 H. H. Hickman, Corrugated Bar Co., Chicago, Ill.  
 T. L. Hughes, Universal Portland Cement Co., Pittsburgh, Pa.  
 Paul A. Jandernal, Lehigh Portland Cement Co., New Castle, Pa.  
 F. M. Johnson, Penn Metal Co., Boston, Mass.  
 S. S. Jenkins, U. S. Gypsum Co., Chicago, Ill.  
 T. J. Boecklen, Jamestown Paint & Varnish Co., Chicago, Ill.  
 Chas. Kinkade, Atlas Paint Co., Cleveland, Ohio.  
 W. L. Krider, U. S. Gypsum Co., Chicago, Ill.  
 John A. Kling, Cleveland Builders' Supply Co., Cleveland, Ohio.  
 Walter F. Jahncke, Fritz Jahncke, Inc., New Orleans, La.  
 John W. Kohl, Twin City Building Material Co., St. Paul, Minn.  
 Charles M. Kelly, James C. Goff Co., Providence, R. I.  
 D. J. Kennedy, D. J. Kennedy Co., Pittsburgh, Pa.  
 Chas. A. Kimball, Atlas Portland Cement Co., New York, N. Y.  
 F. H. Kinney, Hyde Park Supply Co., Cincinnati, Ohio.  
 W. J. Lance, Wisconsin Lime & Cement Co., Chicago, Ill.  
 Charles L. Lee, Palmer Lime & Cement Co., New York City.  
 E. K. Lackland, Laclede-Christy Cement Plaster Co., St. Louis, Mo.  
 Louis G. Powell, Bostwick Steel Lath Co., Niles, Ohio.  
 E. C. Little, Laclede-Christy Cement Plaster Co., St. Louis, Mo.  
 Peter Martin, Ohio & Western Lime Co., Huntington, Ind.  
 R. W. Marshall, Wheeling Wall Plaster Co., Wheeling, W. Va.  
 Robert J. Mehren, Thos. Connelly Co., Chicago, Ill.  
 E. J. Mitchell, Humbert Co., Niagara Falls, N. Y.  
 H. D. Mercer, Wisconsin Lime & Cement Co., Chicago, Ill.  
 E. H. Michel, Salmen Brick & Lumber Co., Ltd., New Orleans, La.  
 Frank A. Mitchell, Ceresit Waterproofing Co., Chicago, Ill.  
 W. H. Murray, Crescent Portland Cement Co., Wampum, Pa.  
 C. C. Messenger, International Roofing Co., Chicago, Ill.  
 O. C. Maurer, Woodville Lime & Cement Co., Toledo, Ohio.  
 H. C. McCrady, McCrady Bros. Co., Braddock, Pa.  
 T. B. Milhoon, American Rolling Mill Co., Middletown, Ohio.  
 J. B. Moor, H. M. Reynolds Asphalt Shingle Co., Grand Rapids, Mich.  
 L. W. Macatee, W. L. Macatee & Son, Houston, Tex.  
 R. B. Mather, Mather Bros. Co., Richmond, Ind.  
 T. Marston, W. L. Macatee & Sons, Houston, Tex.  
 A. B. Meyer, A. B. Meyer & Co., Indianapolis, Ind.  
 T. W. Murray, Trussed Concrete Steel Co., Youngstown, Ohio.  
 B. F. McCausland, U. S. Gypsum Co., Cleveland, Ohio.  
 Bernard L. McNulty, Mitchell Lime Co., Mitchell, Ind.  
 D. H. Nichols, ROCK PRODUCTS AND BUILDING MATERIALS, Chicago, Ill.  
 Geo. A. Olsen, ROCK PRODUCTS AND BUILDING MATERIALS, Chicago, Ill.  
 F. A. Bonstedt, The Granite Clay Co., Akron, Ohio.  
 H. J. Osterlund, Plymouth Gypsum Co., Fort Dodge, Iowa.  
 C. A. Owens, John D. Owens & Son, Owens, Ohio.  
 H. E. Osborne, Kelley Island Lime & Transport Co., Cleveland, Ohio.  
 J. A. Pfeiffer, Northwestern Expanded Metal Co., Chicago, Ill.  
 Robert J. Pilat, U. S. Material Co., Chicago, Ill.  
 Edward R. Pusey, Del-Mar-Col. Assn., Wilmington, Del.  
 C. V. Pierson, Duluth Builders' Supply Co., Duluth, Minn.  
 J. R. Paul, Ironton Portland Cement Co., Ironton, Ohio.  
 F. B. Peters, Lehigh Portland Cement Co., Cincinnati, Ohio.  
 C. O. Powell, Northwestern Expanded Metal Co., Chicago, Ill.

C. H. D. Rohwer, Lehigh Portland Cement Co., Chicago, Ill.  
 C. B. Rogers, Lehigh Portland Cement Co., Chicago, Ill.  
 B. H. Rader, Universal Portland Cement Co., Pittsburgh, Pa.  
 W. T. Rossiter, Cleveland Builders' Supply Co., Cleveland, Ohio.  
 Ivan Ringstad, Midway Lime & Cement Co., St. Paul, Minn.  
 C. H. Rose, Garden City Sand Co., Chicago, Ill.  
 H. F. Rowse, Robinson Clay Products Co., Akron, Ohio.  
 Chas. S. Robbins, Wadsworth Howland & Co., Boston, Mass.  
 H. G. Reynolds, H. M. Reynolds Asphalt Shingle Co., Grand Rapids, Mich.  
 J. C. Spencer, Spencer Bros., Chicago, Ill.  
 Frank Steeg, U. S. Gypsum Co., Kansas City, Mo.  
 W. A. Sells, Northwestern Expanded Metal Co., Chicago, Ill.  
 N. A. Skinner, Best Bros. Keene's Cement Co., Chicago, Ill.  
 Everett E. Swiney, Knapp Bros. Mfg. Co., Chicago, Ill.  
 J. W. Stromberg, Clinton Wire Cloth Co., Chicago, Ill.  
 T. W. Spinke, Marion M. Allen Supply Co., Newport, Ky.  
 T. W. Spinke, T. W. Spinke Co., Covington, Ky.  
 Chas. Schmutz, Crescent Portland Cement Co., Wampum, Pa.  
 C. C. Stewart, Sykes Metal Lath & Rfg. Co., Warren, Ohio.  
 Ralph E. Sunderland, Sunderland Bros. Co., Omaha, Neb.  
 I. M. Smith, Marcelleis, Mich.  
 C. M. Tinsman, Kosmos Portland Cement Co., Louisville, Ky.  
 Jas. M. Triggs, The Majestic Co., Huntington, Ind.  
 W. B. Turner, General Fireproofing Co., Youngstown, Ohio.  
 H. Tucker, T. Wilce Co., Chicago, Ill.  
 C. N. Ray, United Fuel & Supply Co., Detroit, Mich.  
 John J. Voelkel, J. J. Clarke Co., Ltd., New Orleans, La.  
 John P. Wagner, American Luxfer Prism Co., Chicago, Ill.  
 John P. Wagner, American Luxfer Prism Co., Chicago, Ill.  
 J. W. Windsor, Houston Bros. Co., Pittsburgh, Pa.  
 R. A. Williams, American Cement Plaster Co., Lawrence, Kan.  
 A. B. Waugh, U. S. Gypsum Co., Chicago, Ill.  
 Floyd E. Waite, S. A. F. E., Cleveland, Ohio.  
 E. G. Westerberg, Chicago Fire Brick Co., Chicago, Ill.  
 C. J. Waterhouse, Waterhouse & Price, San Francisco, Cal.  
 P. J. Johnson, John A. Denies Sons Co., Memphis, Tenn.  
 W. H. Thompson, Vinton, Iowa.  
 K. P. Dayton, Garden City Sand Co., Chicago, Ill.  
 Geo. A. Bryant, G. M. Bryant, Defrees, Ill.  
 G. A. Andersen, Chicago Fire Brick Co., Chicago, Ill.  
 Jno. L. Rice, Vitrified Clay Industry, Chicago, Ill.  
 H. T. Schief, Balkens Enamel, Indianapolis, Ind.  
 H. A. Rogers, The A. B. Keopert Co., Indianapolis, Ind.  
 Fred Goepfer, Fred Goepfer, Indianapolis, Ind.  
 James Fryer, Illinois Lime Co., Chicago, Ill.  
 R. E. Smock, Ceresit Waterproof Co., Chicago, Ill.  
 Wm. H. Pipkora, M. H. Pipkora Co., Milwaukee, Wis.  
 H. D. Jenkins, Sandusky Portland Cement Co., Chicago, Ill.  
 W. W. Nicol, Peoria Fuel Co., Peoria, Ill.  
 W. K. Evans, Sandusky Portland Cement Co., Chicago, Ill.  
 Wild Bill Collins, U. S. Gypsum Co., Chicago, Ill.  
 M. F. McGuin, Maywood, Ill.  
 C. B. Samuel, Lookout Paint Mfg. Co., Chattanooga, Tenn.  
 Edgar G. Barnett, The Geist Cement Product Co., Cleveland, Ohio.  
 Horace C. Irwin Co., Springfield, Ill.  
 D. C. Mauman, Mauman-Smith Sup. Co., St. Joseph, Mo.  
 Gordon Wilson, Universal Portland Cement Co., Chicago, Ill.  
 B. B. Noyes, Chicago Fire Brick Co., Chicago, Ill.  
 A. P. Foster, Cincinnati, Ohio.  
 S. W. Curtis, Garden City Sand Co., Chicago, Ill.  
 W. E. Viets, Lehigh Cement Co., Chicago, Ill.  
 Frank J. Silha, Wilcox Company, Chicago, Ill.  
 Roland Brilars, Wilcox Co., Chicago, Ill.  
 Frank E. Lane, Astrid S. Rosing, Chicago, Ill.



W. D. K. Rayburn, Marquette Cement Mfg. Co., Chicago, Ill.  
 Wm. Nast, Nast Bros. Lime & Stone Co., Marblehead, Wis.  
 Carl H. Ruedeburch, Mayville White Lime Works, Mayville, Wis.  
 N. J. Druecker & Co., Chicago, Ill.  
 Geo. R. Wales, Clinton Metallic Paint Co., Indianapolis, Ind.  
 Chas. H. Brigham, Atlas Portland Cement Co., Chicago, Ill.  
 Jas. J. Lyons, Meacham & Wright Bk. Co., Chicago, Ill.  
 F. E. Paulsen, Lehigh Cement Co., Allentown, Pa.  
 Royal E. Clarke, Ceresit Waterproofing Co., New York, N. Y.  
 M. J. MacAdams, E. D. Coddington Mfg. Co., Chicago, Ill.  
 C. F. Dynes, Wisconsin Lime & Cement Co., Chicago, Ill.  
 E. C. Owen, Chicago Fire Brick Co., Chicago, Ill.  
 M. M. Reiling, A. S. Rosing, Chicago, Ill.  
 Harvey L. Tapper, Wilcox Co., Chicago, Ill.  
 G. A. Andresen, Chicago Fire Brick Co., Chicago, Ill.  
 A. C. Armstrong, The Thompson-Armstrong Co., Cincinnati, Ohio.

W. P. Whitney, Alton Brick Co., Alton, Ill.  
 Louis Schubert, Wilcox Co., Chicago, Ill.  
 H. H. Gillingham, H. M. Reynolds Asphalt Co., Grand Rapids, Mich.  
 J. B. Boardman, Jr., Huron & Wyandotte Portland Cement Co., Detroit, Mich.  
 Kenneth P. Gregg, Shevlin-Carpenter Lumber Co., Minneapolis, Minn.  
 J. U. C. McDaniel, Chicago Portland Cement Co., Chicago, Ill.  
 J. J. Commons, Chicago Portland Cement Co., Chicago, Ill.  
 B. E. Kaestner, Waukesha Lime & Stone Co., Milwaukee, Wis.  
 Alfred T. Druecke, J. Druecke Sons Co., Milwaukee, Wis.  
 J. Druecke Sons Co., John P. Druecke, Milwaukee, Wis.  
 Christ Sarnow, Sarnow Lime Co., Milwaukee, Wis.  
 Ed. Whitnall, Penn Coal & Supply Co., Milwaukee, Wis.  
 W. T. Taylor, Taylor Button Co., Milwaukee, Wis.  
 C. S. McDonnell, M. W. McDonnell & Sons Co., Chicago, Ill.  
 B. T. MacDonald, Marquette Cement Mfg. Co., Chicago, Ill.  
 M. B. Hinton, Wisconsin Lime & Cement Co., Chicago, Ill.  
 J. K. Lowe, Wolverine Portland Cement Co., Coldwater, Mich.

W. H. Price, U. S. Gypsum Co., Chicago, Ill.  
 George D. Steele, Cement Era, Chicago.  
 Otto Rueter, W. F. Kaiser & Co., Chicago, Ill.  
 Thomas Brisch, Rockwell Lime Co., Chicago, Ill.  
 A. E. Weaver, Mt. Auburn, Ill.  
 Wm. C. Crollins, Wm. C. Crollins Co., Chicago, Ill.  
 Theo. C. Schwler, Ed. N. Baltes & Co., Ft. Wayne, Ind.  
 Blaine S. Smith, Universal Portland Cement Co., Chicago, Ill.  
 J. C. Van Doorn, Universal Portland Cement Co., Chicago, Ill.  
 W. D. Stewart, St. Paul Lime & Cement Co., St. Paul, Minn.  
 F. J. Morse, The Builders' Material Co., St. Paul, Minn.  
 E. H. Norhane, Lauders-Morrison-Christenson Co., Minneapolis, Minn.  
 Carl E. Speakes, G. P. Speakes Co., Minneapolis, Minn.  
 J. F. Garland, Plymouth Gypsum Co., Ft. Dodge, Ia.  
 James D. Wigginton, Evanston Building Material Co., Evanston, Ill.  
 Harry A. Taylor, R. Leake & Co., Jackson, Mich.  
 A. H. Gallagher, The National Retarder Co., Chicago, Ill.  
 Harry J. Schmoeger, Peoria Builders' Supply Co., Peoria, Ill.  
 F. H. Stone, Universal Portland Cement Co., Chicago, Ill.

## Eastern Pennsylvania Retailers in First Annual

After Inspecting the Manufacture of Portland Cement in the Lehigh District, Retailers Assemble at Elks' Club, Allentown—George F. Erich Elected President.

The first annual meeting of the Building Material Dealers' Association of Eastern Pennsylvania was held at the Elks' Club, Allentown, Pa., on Tuesday, Feb. 16.

An entertaining, as well as instructive, program had been arranged by the local committee to fill in the morning period and consisted of a trip to the "Ormod F" plant of the Lehigh Portland Cement Co., in a special car chartered by the company for that occasion.

### Inspect Manufacture of Cement.

Arriving at the manufacturing plant, the dealers were introduced to dust-proof coats and caps for the purpose of protecting themselves from dust which is always in abundance around a cement manufacturing plant. Emerging from the wardrobe headquarters the dealers were taken to the quarry where the first act in the production of Portland cement takes place. Here the quarrying of raw material was observed and the methods of loading and transporting to the mill witnessed. Next the drying of the material and the comminution through crusher grinding and pulverizing machinery were noted. The calcination in the 10 large rotary kilns was a source of much interest to the dealers. The manner in which coal in powdered form was fed to the flames through the entire length of the long cylinders caused considerable comment. Colored glasses, furnished by attendants, assisted the visitors in getting a fair view of the method of calcination. The cooling of the hot clinker in huge tanks and the weighing and admixture of gypsum received a great deal of attention, as did the grinding and pulverizing in the finishing mill. The conveyance of the finished product to the stock house or storage bins was not visible, but an inspection of the storage bins revealed many tons of the finished product ready for sacking. From beneath the piles of finished cement a belt conveyor, running through a tunnel, was used to reconvey the material to the pack house and to the packing machines. Two men were busy at the "Bates" sacking machines and through the automatic devices were enabled to work with a good deal of rapidity in filling the cement sacks. As the sacks dropped from the machines they fell upon a chute which carried them into the cars where they were carefully packed for transportation.

The entire operation from the stage of loading at the quarries to the filling of the bags is automatic at this plant, and it is due to this method in practically every cement plant that the price of Portland cement today is but a small fraction of what it was 10 years ago.

After the inspection of the plant the dealers returned to Allentown where they were the guests of the Lehigh Portland Cement Co., at luncheon, in the Elks' Club.

### Retailers Meet and Elect Officers.

A meeting for dealers only followed immediately after luncheon. The session opened with President

Charles A. Miller in the chair, and the regular routine business of roll call and reading of the minutes was the first order of business.

Following the report of Treasurer Luther Keller, J. L. Durnell spoke of the work of the special committee which was appointed by the Eastern Pennsylvania retailers to meet the cement manufacturers in conjunction with other Eastern retailers' associations. Mr. Durnell, who is chairman of the committee, gave a detailed report of the work done, and emphasized the fact that he believed some manufacturers of Portland cement were already anxious to co-operate with the building material dealers and that the rest of them would fall in line very shortly.

At the suggestion of President Miller, Luther Keller, of Scranton, was elected chairman pro tem



GEORGE F. ERICH, PRESIDENT, BUILDING MATERIAL DEALERS' ASSOCIATION OF EASTERN PENNSYLVANIA.

during the election of officers. Mr. Keller, who performed the same function at the first meeting of the Eastern Pennsylvania supply dealers last March, recited, in a few words, the needs of the association and the importance of electing officers who will work diligently and faithfully for the welfare of the organization.

The result of the election was as follows:

President—George F. Erich, Allentown.

Vice Presidents—Charles A. Miller, Reading, J. H. Hendricks, Pottstown. The holdover vice presidents are E. L. Merriman, Scranton, and J. L. Durnell, Philadelphia.

Secretary—Charles H. Cox, Phoenixville.

Treasurer—Luther Keller, Scranton.

Executive Committee—J. Allison Gring, Reading; H. I. Moyer, Perkasio. The holdover members of this committee are J. C. Budding, Lancaster, and William Schuler, Wilkes Barre.

In congratulating the newly elected president Mr. Keller said, "Here is work."

### Sees Opportunity for Work.

In accepting the office of president, Mr. Erich said: "I thank you for the burden. There is lots of work to be done, but it can be accomplished through united effort. In every town where there are dealers you should have one or two members on a committee to work up membership."

His inauguration was hailed with a great deal of pleasure on the part of the assembled dealers for, in addition to the above remarks, President Erich related instances how, to his knowledge, retail coal dealers had become acquainted with each other and to a large extent solved some of the problems confronting that trade. He gave to the dealers present the impression that during the coming year the association will have reason to prosper because of the activity which he has promised every member of the association the retailers will be called upon to perform.

### Benefits of Association Work.

The benefits of association work and the possible results of the Eastern Pennsylvania association were discussed by a number of the dealers present, and at some length by Messrs. Durnell, of Philadelphia, and Swarr, of Lancaster. The question of membership received a good deal of discussion and, upon motion, the matter was referred to the executive committee with instructions to meet at an early date. New members were taken into the association as follows:

W. N. Snyder, W. D. Snyder & Son, Tower City.

Samuel H. French & Co., Philadelphia.

A vote of thanks, upon motion of D. C. Geiger, of Reading, was given to the Lehigh Portland Cement Co. for the luncheon and the morning's entertainment.

Before admitting the manufacturers to the assembly hall there was a thorough discussion as to the advisability of holding meetings oftener, with the result that the president was instructed to call a meeting in Philadelphia during the month of May. The business session then adjourned and the manufacturers and their representatives were asked to join the dealers in an open session.

### Manufacturers' Representatives Talk to Dealers.

J. C. Seguire, sales manager of J. B. King & Co., was asked to address the assembled material men and spoke at length on co-operation between the dealer and manufacturer. He left as a parting remark a little food for thought, as he called it, when he asked the question, "Is it unreasonable for a manufacturer or a dealer to make a fair return on his investment?"

(Continued on page 37.)



# Illinois Dealers Assemble in Large Numbers

Celebrate Silver Anniversary in Three-Days' Session Immediately After National Retailers' Convention—L. M. Bayne Re-elected President.

The twenty-fifth annual convention of the Illinois Lumber and Builders' Supply Dealers' Association was held in the Louis XVI room of the Sherman hotel on Feb. 10-12, and followed upon the heels of the National Builders' Supply Association. The first meeting of the Prairie state retailers was called to order by President L. M. Bayne, of Ottawa, at 2:00 o'clock Wednesday afternoon.

The initial item on the program was a musical number by members of the Universal quartette. Following this President Bayne gave his annual address, in which he admonished the dealers to keep up the good work fostered by the association movement and to strive for a closer co-operation between the members.

The reports of Treasurer J. W. Paddock, of Pana, and Secretary George W. Jones, of Chicago, cited the financial and numerical strength of the organization.

Ralph Herring, of Hinsdale, livened the meeting by temporarily taking the thoughts of the dealers off of their routine work by a baritone solo.

## Hotchkiss—The Salesman.

A feature of the afternoon's session was a talk by Secretary Emeritus G. W. Hotchkiss. The topic assigned him was "An Octogenarian Salesman." Mr. Hotchkiss, who is now in his eighty-fourth year, is to be congratulated on the manner in which he gave his talk and the suggestions and progressive ideas conveyed to the attendants through the instrumentality of his voice. His experience dates back as far as 1845 when, as a boy of 14 years, he began his activity in the building material field in his father's lumber yard. In addition to having the pleasure of celebrating the silver anniversary of the organization which he was largely instrumental in perfecting, Mr. Hotchkiss finishes in 1915 his seventieth year of daily contact with lumber and builders' supply men and their work.

A practical and detailed talk on "Keeping up with Rising Costs" was made by Frank Stockdale, of Chicago, who, not only quoted figures for the benefit of the assembled dealers, but illustrated his remarks by using a black board to tabulate the figures and percentages of which he spoke and also to show conclusively the necessity of placing against an article all charges which enter into its purchase, handling, and selling.

Mr. Stockdale emphasized the point that the average lumber and builders' supply dealer bases all of his figures on the cost of an article, whereas they should be calculated on the selling price. He stated that it is the custom of the best business men to figure on the selling price and that it was practically the only safe way of ascertaining profits.

He also brought out the point that guess work is largely responsible for the lowering of prices. In asking this question of 39 retailers of building materials 24 answered in the affirmative. Another question asked of these same retailers was "What governs the setting of a price?" Eleven answered, "competition," one, "quality and service;" five stated that competition has no influence toward fixing prices; ten insisted that the reduction of profits was responsible; two argued that competition causes co-operation and consequently improves conditions; three claimed that competition steadied prices, while seven were non-committal.

## Live Questions Discussed on Tuesday.

The second day's session was opened at two o'clock Thursday with Vice-President P. T. Langan, of Cairo, in the chair. A smile, which permeated the countenance of the southern Illinois dealer and had its effect upon the entire audience, was occasioned by the gavel with which Mr. Langan rapped

for attention. There is a history connected with it. The instrument, which he so proudly wielded, has been under the water for a period of 50 years and came into his possession last fall. It was constructed from a piece of white oak which was taken from the side of the Gunboat Essex, sunk in the Ohio river between Cairo and Mound City, Ill., during the last year of the Civil War. It was on Nov. 20, 1914, that Mr. Langan manufactured the insignia of authority in his planing mill.

Allister Wylie, of Galesburg, succeeded in bringing into the convention hall such members who lingered at the registration desk by a piano selection.

He was followed by Harry F. Fogelman, of Chicago, who made a masterful address upon "Personality and Salesmanship and Business Build-



L. M. BAYNE, PRESIDENT, ILLINOIS RETAIL DEALERS' ASSOCIATION.

ing." The speaker, who is an authority upon salesmanship, brought out the fundamental principles upon which the retailing of building materials should be conducted and emphasized the fact that a business may be improved and increased in volume when the personnel of the institution seeking such an improvement is worthy of the recognition of the community and deserving of its confidence.

The Universal Quartette, the members of which are connected with the sales department of the Universal Portland Cement Co., brought round after round of applause as they favored the dealers with vocal music.

## Traffic Questions Always Interesting.

Traffic questions were discussed by J. M. Blanchard, of Chicago, who is connected with the traffic department employed by the association. Going into detail, freight problems affecting lumber and builders' supply retailers were thoroughly discussed and specific experiences were related by the traffic expert in order that the entire membership of the association might benefit from the experience of a number of its members.

Emphasizing the necessity of being affiliated with a reliable department, Mr. Blanchard stated that in one instance he had found in the same tariff 30 different combinations, all of which affected one rate. The equipment necessary for immediate reference in traffic departments is of such large proportions that only concerns similar to the large cement companies and the steel corporations can afford to employ them. Hence, the necessity of the small dealers grouping together and employing a traffic bureau well equipped to handle all questions of freight rates.

Fred J. Cassidy, one of the Chicago Portland Cement Co.'s salesmen, favored the convention with a baritone solo which he sang in Scotch dia-

lect and which referred to the home and kinsfolk of one who has migrated from his native land to distant shores. Remarks were heard in various parts of the hall to the effect that if Cassidy would confine his singing entirely to Scotch songs, Harry Lauder would soon have a close contender for a warm spot in the hearts of Scotchmen. The applause which Cassidy received brought forth another and a third solo.

One of the speakers of the afternoon, Kenneth S. Duncan, of the Duncan Shingle and Lumber Co., Kansas City, Mo., pleaded for more interest on the part of the dealers in the wooden shingle. His topic was "Life or Death to the Shingle Industry."

A report of the work of the ways and means committee, which held a meeting Thursday morning, was received and resulted in the commencement of a membership campaign, which will be conducted on the county system, each member taking his own or some other county and canvassing it thoroughly for new members.

H. C. Searce, secretary of the Indiana Lumbermen's Association, was introduced by Secretary G. W. Jones as a super-dreadnaught. Mr. Jones emphasized the advantages of an interchange of ideas which proved beneficial to the trade.

The resolutions committee presented two resolutions to the convention which were unanimously adopted. One of these pertained to the board of directors and made a provision for the increase of membership on that board. The other took into consideration the present condition of the constitution and by-laws and made provision for a committee of three to completely revise the association's laws.

The auditing committee reported the books of the treasurer were in good condition.

## President Bayne Re-elected.

A nominating committee, in presenting its report, placed again in nomination for president L. M. Bayne, of Ottawa; P. T. Langan, of Cairo, for vice-president, and J. W. Paddock, of Pana, for treasurer. For members of the board of directors the following were placed in nomination: One year, C. B. Moore, Aurora; two years, C. J. Hayward, Elgin; three years, N. E. Holden, Danville; H. H. Halliday, Cairo, and M. McGrath, of Polo. The report of the nominating committee was unanimously adopted when the question on its acceptance was put by Vice-President Langan.

In accepting the office of president for another year, Mr. Bayne was so overcome that he could say nothing but "Thank you." Mr. Bayne became president of the organization a year ago when it had an indebtedness of \$19,000 and, at great sacrifice of time and money, has traveled extensively and worked hard in the interest of retailers of Illinois; the report of the year's work shows that the organization has been entirely cleared of debt. It was due to the splendid record made by President Bayne that the membership as a whole voted for his re-election.

The committee appointed last year to study the cement question and meet cement salesmen and manufacturers for the purpose of securing information tending toward a more profitable and advantageous proposition for the retailer reported that it had been impossible to hold a meeting during the past year and for that reason there was nothing to report. President Bayne appointed a committee to handle the same question during 1915.

In an attempt to secure the next convention of the Illinois Lumber and Builders Supply Dealers' Association for Peoria, R. W. Dull, of that city, presented its beauty and other merits and stated that he did not believe it was to the best interests of the association to hold its conventions in Chicago.

# New England Dealers in Successful Convention

Builders' Supply Merchants Assemble at American House, Boston, for Fifth Annual Meeting—C. M. Kelly Remains President—Banquet Proves Attractive and Prominent Feature.

With an attendance that packed the convention hall of the American hotel, Boston, the fifth annual convention of the New England Builders' Supply Association was held Thursday afternoon, Feb. 18. The interesting program brought into discussion lien laws, credit systems, association membership, cement bag problems, and possible relations between manufacturers and dealers.

There were really two meetings held on the day of the annual convention, one exclusively for dealers and the other an open meeting for manufacturers and retailers. Previous to these meetings, the executive committee held a short session and completed final preparations for the convention.

In calling the meeting to order President Charles M. Kelly welcomed the dealers and gave a brief review of the history of the association which has existed for the past four years in the states of New England. Mr. Kelly explained that while progress may have been slow, the executive committee felt that at least to a small extent some progress has been made. He reported that during the past year the association, as well as the wel-

been present at practically every meeting of the committee. Members of the nominating committee were Messrs. Powers, Aspin and Ray.

At the close of routine business the president called for a discussion on "the relations which should exist between manufacturers and dealers for the sale of material." He stated that sometimes members of associations think that dealers pay too much attention to the cement question; other questions relating to building materials seem just as great. He stated that several meetings had been held with representatives of other retailers' associations in the East for the purpose of discussing with manufacturers items of vital interest to the sale of cement. According to reports, there is more cement sold through the building material retailer each succeeding year. In 1914 one of the large manufacturers sold at least 90 per cent of its business through dealers.

## Dealer Must Be on the Square.

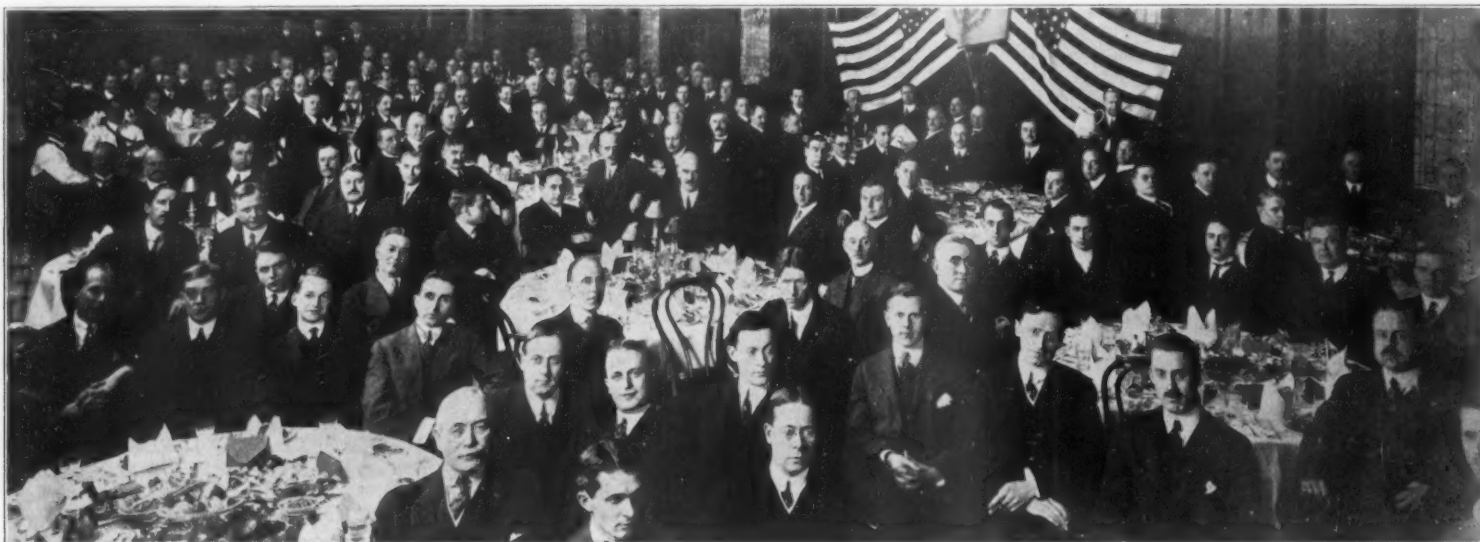
Following President Kelly, Frank H. Johnston, of New Britain, Conn., spoke favorably on associa-

The discussion on the cement bag feature of the business brought out the point that the proper manner in which to handle cement bags would be to allow a sum less than 10 cents for the return of empty cement sacks. No solution of the problem was advocated because of the extensive research necessary for the adoption of a successful plan for the working out of this question. The solution of this problem really involves an association containing 100 per cent of retailers eligible to membership.

## Lien Laws Important to Dealer.

Credit systems were discussed but briefly because of the shortness of time and the desire to place before the association the subject of "Lien Laws," a very interesting subject for the dealers of New England, especially those located in the state of Massachusetts.

Secretary Whitney, who is representing the association in an endeavor to secure a lien law for the state of Massachusetts, reported that the association has done considerable work, and has overcome nu-



RETAILERS AND MANUFACTURERS OF NEW ENGLAND IN ANNUAL BANQUET AT BOSTON.

fare of building material dealers in New England, had received valuable support on the part of the manufacturers.

## Increase in Membership.

Following the president's remarks, Secretary F. H. Kingsley gave a report of the meeting held at the Bancroft hotel, Worcester, Mass., last February. His minutes showed that in February, 1913, there was a membership of 94 and Jan. 31, 1914, produced a gain of 20 members, or a total of 114. Feb. 1, 1915, showed an additional increase of four members and makes the present total 118.

The reports of Treasurer S. F. Hammett and the auditing committee show the books to be in a perfect condition.

In appointing the nominating committee, President Kelly stated that the association was organized in May, 1911, at the behest of a number of men engaged in the sale of building materials in order that conditions between dealers and manufacturers might be better. He stated that he had served as its president from the start and pled that the association should elect a new president. He complimented the executive committee upon their loyalty and stated that a full attendance had

tion matters. He said: "It is detrimental to ask the manufacturers to live up to any rule unless we adopt some plan as dealers and abide by that plan. If the dealer is willing to cut his commission or his price to the consumer he must not complain if the manufacturer comes in and gets some of the business direct. Builders' supply dealers should do business on the square." Mr. Johnston pled for the placing of the retail builders' supply business on a higher level.

Following this there was an interesting discussion on the relation of the dealer to the other dealers. Among the men taking part in this discussion were Charles S. Paisler, of New Bedford, Mass.; John D. Aspin, of Lynn, Mass.; Bernard McTiernan, Providence, R. I., and Secretary Whitney. During this discussion the suggestion was made that the secretary or some individual appointed by the executive committee should travel through sections where troubles exist and bring the various dealers together in order that conditions may be remedied. Throughout the discussion there seemed to be an endeavor prevalent which would result in getting retailers into better harmony and inducing them to uphold prices and secure a living return for their investment and labor.

merous obstacles in the endeavor to place upon the statutes of Massachusetts a lien law which will protect sub-contractors or men who furnish the material of which buildings are constructed.

In reviewing the lien laws of the various states, Mr. Whitney explained that Rhode Island has an ideal law, while Massachusetts has not, and that the association started the movement in Massachusetts and is concentrating its efforts in this state because if the law goes through the legislature, it will be easier for the other states to fall in line. The old Massachusetts law insists that a lien can only be levied on property when a notice has been given before the delivery of material. The provisions of the measure which building material dealers want passed permits them a time limit of 60 days in which to file a lien; that is, 60 days from the time of the delivery of materials. Mr. Whitney concluded his remarks by reciting the interesting experiences the association committee has had in meeting with committees from other associations and with members of the legislature. He reported that, according to indications, the legislators have been convinced that the building material interests deserve a lien law which will protect them and prevent the unscrupulous contractor from carrying on his nefarious business. The



members of the committee appointed by the New England association to bring the matter to the attention of Massachusetts legislators are Messrs. Whitney, Cleveland and O'Connell.

Frank H. Johnston, of New Britain, Conn., explained that in his state the retailers are fighting from the other end. At present they have a 60-day law in Connecticut, but there is pending before the legislature a bill which will compel the filing of the lien in advance of delivery of materials.

Mr. Paisler stated that it is the mortgage men who fight lien laws which favor the building material men. It is that class for whom the retailer will have to look out. He insisted that the lien law will place the irresponsible contractor in the class of the journeyman—the place where he belongs.

President Kelly emphasized the fact that the membership feature should be considered very seriously and offered the suggestion that a fund be raised for the purpose of hiring a traveling secretary. Among the men who spoke upon this question and who favored the proposition were Messrs. Aspin, McTiernan, B. F. Marsh, of Worcester, Mass., and G. A. Olsen, of ROCK PRODUCTS AND BUILDING MATERIALS. As a result of the discussion it was voted to appoint a committee of six to look over the list of members, and see if a sum sufficiently large to care for the plans suggested by President Kelly could be secured. The committee will be appointed at a later date.

#### C. M. Kelly Re-elected President.

Mr. Powers reported for the nominating committee and explained the attitude taken by the committee in selecting their president in the following words: "In accordance with the request of President Kelly we have gone over the list of members carefully, and have decided not to nominate Charles M. Kelly for president, but our choice is C. M. Kelly, of Providence, R. I." Mr. Kelly really wanted to be relieved of the presidency, and had previously stated that there were men equally as good, and some better in the association, who might serve as its head, and when Mr. Powers finished the first part of his remarks a smile spread over the countenance of the chairman, but when Mr. Powers finished his report in regard to the presidency, Mr. Kelly's face bore a look of embarrassment. He reiterated his remarks to the effect that someone else should have been elected president, but thanking the association for the confidence its members had placed in him he agreed to serve for another year.

Other nominees reported by the committee were as follows:

Vice president-at-large, R. H. Whitney, treasurer of B. F. Marsh Co., Worcester, Mass.

Secretary, F. H. Kingsley, secretary of Borden & Remington Co., Fall River, Mass.

Treasurer, S. F. Hammett, Taunton Teaming Co., Taunton, Mass.

Vice presidents, for the following states: Maine, Mr. Purington, of Purington Bros., Augusta; Vermont, J. J. Whalen, Strong Hardware Co., Burlington; Massachusetts, E. A. Wilson, Lowell; Rhode Island, George E. Shaw, of Olney & Paine, Pawtucket; Connecticut, E. H. Palmer, of Stamford Mason Supply Co., Stamford; New Hampshire, A. S. Brown, Manchester.

Upon motion the secretary was instructed to cast one ballot for the list of officers as presented by the nominating committee. The matter of deciding where to hold the next annual meeting was left to the executive committee. The meeting then adjourned.

#### The Open Session.

Immediately following the regular meeting of retailers an open session was held, to which were invited manufacturers and their representatives. The principal speakers at this meeting were W. C. Schulz, of Charles Schulz & Son, Hoboken, N. J., and formerly president of New Jersey Mason Material Dealers' Association, and E. S. Larned, representative of the Lehigh Portland Cement Co., in the Boston district.

Shortly after 6:30 o'clock, a large number of the dealers and manufacturers present repaired to the banquet hall, where a menu composed as far as possible of products of New England was served. An orchestra furnished music, while popular songs were sung from a booklet prepared especially for the occasion.

Following the meal two resolutions were passed, one which endorsed the "Build Now" campaign advocated by the Boston Post and prominent men of the "Hub" city. The other commended the action of the lien law committee and the various bodies working with the committee endeavoring to place upon the statute books of Massachusetts a practical lien law.

The principal speaker of the evening was William Ward Whiteher, who represented the sash, door and blind interests. Mr. Whiteher spoke on "Liens" and stated that Massachusetts had been marking time for 63 years and she is now lifting one of her feet from the ground and ready to advance. He stated that 38 states now give material men all that is desired in the way of a lien law, but emphasized the fact that this was but 77 per cent of the states in the Union, and Massachusetts is one of the number not favored with this protection. He declared that the existence of lien laws and their enforcement facilitates business and in no way retards it.

An excellent cabaret show followed Mr. Whiteher's address and the bond of fellowship had so infested every man present that when the piano had ceased its vibrations and the last cabaret dancer had left, the boys were still together and furnished from their own number a piano player in the person of E. S. Larned and, instead of a few leading actors, every man present became part of an entertainment feature. Mr. Larned is an accomplished musician and proved his ability to sway his fellow banqueters from one chorus into another and from popular songs into sentimental melodies and national airs. About 11 p. m. when the strains of "The Star Spangled Banner" caused every man to rise to his feet and give vent to his patriotic feelings in his very best voice, the "Fifth Annual" of the New England Builders' Supply Association drew to a close, but not until every one present decided it was the best meeting in the history of the association and would await eagerly the announcement of the next convention.

#### REGISTERED ATTENDANCE.

##### Members and Dealers Present.

Chas. M. Kelly, J. C. Goff Co., Prov., R. I.  
R. H. Whitney, B. F. Marsh Co., Worcester, Mass.  
S. F. Hammett, Taunton Teaming Co., Taunton, Mass.  
F. H. Johnston, City Coal & Wood Co., New Britain, Conn.  
F. E. Kimball, Spaulding & Kimball, Burlington, Vt.  
F. H. Kingsley, Borden & Remington Co., Fall River, Mass.  
F. E. Powers, F. E. Powers Co., Worcester, Mass.  
M. J. Barnes, The Howard Co., New Haven, Conn.  
Frank W. Clark, Portland Stoneware Co., Boston, Mass.  
Edw. W. Cram, Portland Stoneware Co., Boston, Mass.  
S. M. Hersey, Portland Stoneware Co., Boston, Mass.  
E. H. Winslow, Winslow & Co., Portland, Me.  
H. C. Curtis, Portland Stoneware Co., Boston, Mass.  
Bernard McTiernan, Olneyville Hay & Grain Co.  
Thos. H. Early, Thos. H. Early & Co.  
Moulton Friend, John M. Friend, Newport, R. I.  
Ira Humphrey, P. D. Humphrey, Tiverton, R. I.  
Geo. W. Baker, Waldo Bros., Boston, Mass.  
Roy C. Thompson, E. W. Fernald, Presque Isle, Me.  
Walter L. Ray, Windsor Cement Co., Boston, Mass.  
I. O. Goodrich, Windsor Cement Co., Boston, Mass.  
H. C. Godfrey, The Sillman & Godfrey Co., Bridgeport, Conn.  
M. T. Royan, Windsor Cement Co., Boston, Mass.  
B. F. Marsh, B. F. Marsh Co., Worcester, Mass.  
Fred E. Goff, Presbrey Stove Lining Co., Taunton, Mass.  
B. C. Pierce, Presbrey Stove Lining Co., Taunton, Mass.  
E. C. Davis, Waldo Bros., Boston, Mass.  
Frank Howard, Frank Howard Co., Pittsfield, Mass.  
C. C. Gamwell, C. C. Gamwell, Pittsfield, Mass.  
Walter H. Manchester, Manchester & Hudson Co., Prov., R. I.  
Edwin D. Allen, Manchester & Hudson Co., Prov., R. I.  
Frank L. Congdon, Manchester & Hudson Co., Prov., R. I.  
H. R. Horton, H. R. Horton Co., Prov., R. I.  
C. E. Hale, Arlington Coal Co., Arlington Heights, Mass.  
E. S. Fields, Starrett Fields Co., Boston, Mass.  
W. M. Pettet, W. M. Pettet, Fall River, Mass.  
I. E. Rogers, W. M. Pettet, Fall River, Mass.  
A. H. Wilbur, Taunton Lumber Co., Brockton, Mass.

A. H. Boulter, J. C. Goff Co., Providence, R. I.  
Thos. G. Bradshaw, J. C. Goff Co., Providence, R. I.  
Harold L. Vale, J. C. Goff Co., Providence, R. I.  
Merwick L. Goff, J. C. Goff Co., Providence, R. I.  
Wm. H. Powers, Powers Bros., Brockton, Mass.  
L. G. Carter, Berkshire Lumber Co.  
H. G. Fager, Smith, Green Co., Worcester, Mass.  
C. J. Russell, Smith, Green Co., Worcester, Mass.  
J. Rupert Chamberlin, Smith, Green Co., Worcester, Mass.  
J. R. Richards, Smith, Green Co., Worcester, Mass.  
Roy N. Grant, Smith, Green Co., Worcester, Mass.  
E. A. Wilson, E. A. Wilson Co., Lowell, Mass.  
W. S. Simpson, Waldo Bros., Boston, Mass.  
Arthur S. Brown, Arthur S. Brown, Manchester, N. H.  
E. G. Chisholme, Waldo Bros., Boston, Mass.  
C. W. Taylor, Eastern Clay Goods Co.  
H. T. Gallagher, John J. Gallagher, Quincy, Mass.  
John S. Martin Co., John A. Martin, Marblehead, Mass.  
F. L. Morton, B. F. Marsh Co., Worcester, Mass.  
D. C. Richards, Mansfield Lumber Co., Mansfield, Mass.  
C. H. Hooper, Read Nichol Co., Bath, Me.  
L. H. Beaver, Beaver Coal & Grain Co., Norwood, Mass.  
H. A. Dewitt, Geo. H. Dewitt & Son, No. Eastern, Mass.  
E. W. Clark, Waldo Bros. Co., Boston, Mass.  
W. W. Holmes, W. W. Holmes, Webster, Mass.  
Howard Allen, Eastern Clay Goods Co.  
Seth Lee, Eastern Clay Goods Co.  
Claude A. Palmer, Eastern Clay Goods Co.  
Laforest Beals, E. A. Wilson Co., Lowell, Mass.  
John D. Aspen, Peoples' Coal Co.  
H. B. Musk, Lawrence, Mass.  
E. R. Hubbard, Highland Coal Co., Somerville, Mass.  
W. W. Whiteher, Jackson & Newton Co. (Speaker of the evening).  
Geo. B. Hammett, Taunton Teaming Co., Taunton, Mass.  
H. F. G. Russell, New Britain, Conn.  
F. H. Goss, C. B. & F. H. Goss, Melrose, Mass.  
Geo. M. Hall, Benson Coal Co., Melrose, Mass.  
W. H. Wiggins, Portland, Me.  
Hubert S. Keller, Dix Lumber Co., Cambridge, Mass.  
Edw. Bryant Co., Boston, Mass.  
F. J. Perkins, Perkins Bros. Co., Providence, R. I.  
W. C. Schultz, Chas. S. Schultz & Son, Hoboken, N. J. (Formerly Pres. of New Jersey Ass'n.)  
A. A. Jackson, Malden, Mass.  
G. E. Young.  
A. G. Thomson, Waterbury Lumber Co.  
M. Mahoney Est., Lawrence, Mass.  
E. W. Berry, Boston, Mass.  
D. L. Hamilton, Eastern Cement Co., Bangor, Me.  
H. V. Gould, Edw. Bryant Co., Boston, Mass.  
Geo. W. Paine, S. S. Paine & Bros., New Bedford, Mass.  
J. J. Harrigan, J. J. Harrigan.  
J. F. Powers, Powers Bros., Brockton, Mass.  
G. M. Hall, Benson Coal Co.  
A. W. Flinn, Tucker Co., Narragansett Pier, R. I.  
P. E. Cleary, David W. Lewis Co.  
Springfield Contractors' Sup. Co., Springfield, Mass.  
M. C. Spring, C. H. Spring & Co.  
Chas. B. Dolan, Milton Cement Co.

##### Manufacturers Present.

E. S. Larned, Boston, Mass.  
W. G. Hurlburt, Bostwick Steel Lath Co.  
Geo. D. Hawley, Hunt Metal Corner Co.  
T. L. Walde, Palmer Lime & Cement Co.  
C. P. Robinson, Whitehall Cement Co.  
E. G. Brick, Whitehall Portland Cement Co.  
F. M. Johnson, Penn Metal Co.  
George Taylor, Penn Metal Co.  
Eli Harpham, Buckeye Sewer Pipe Co.  
E. Y. Bragger, Sandusky Portland Cement Co.  
S. R. Wright, Berkshire Hills Co.  
F. G. Russell, New Britain, Conn.  
Mr. Kilduff, Hartranft Portland Cement Co.  
Mr. Rugg, Alpha Portland Cement Co.  
Mr. Santee, Alpha Portland Cement Co.  
Mr. Brainerd, Alpha Portland Cement Co.  
Mr. Hewitt, Alpha Portland Cement Co.  
L. Lumsaker, Rockland & Rockport Lime Co.  
W. L. Henley, Rockland & Rockport Lime Co.  
John W. Ramsey, Nazareth Portland Cement Co., Boston, Mass.  
H. Wales Lines Co., F. W. Whitney.  
J. Harold Parry, Parry Brick Co.  
Edson C. Bacon, Warner-Miller Co., New Haven, Conn.  
J. W. Stimpson, Knickerbocker Portland Cement Co.  
S. H. Hunt, Edward Bryant Co.  
Sylvester B. Coen, Barrington Brick Co.  
C. E. Tuleson, Lehigh Portland Cement Co.  
J. R. Sullivan, Giant Portland Cement Co.  
J. C. Segulne, J. B. King & Co.  
T. S. Young, Vulcanite Portland Cement Co.  
A. C. Bruff, Edison Portland Cement Co.  
J. F. Sheppard, Boston, Mass.  
J. W. Hahn, Boston, Mass.  
Robert C. Davis, American Sewer Pipe Co.  
P. E. Bradley, Edison Portland Cement Co.  
H. S. Blanchard, Edison Portland Cement Co.  
R. L. Cope, Allentown Portland Cement Co.  
W. M. Stevenson, Atlas Portland Cement Co.  
F. G. Conklin, Atlas Portland Cement Co.  
F. R. Sullivan, Edward Bryant Co.  
W. M. Jackson, Berger Mfg. Co.  
J. T. Glover, Berger Mfg. Co.  
C. E. Spaulding, U. S. Gypsum Co.  
R. A. Cadby, U. S. Gypsum Co.  
C. W. Smith, U. S. Gypsum Co.  
E. R. Stanley, Supreme Watercolor Co.  
A. E. Felton, New England Lime Co.  
Lowell Palmer, Palmer Lime & Cement Co.  
Charles R. Rioux, Palmer Lime & Cement Co.  
R. G. Inge, American Sewer Pipe Co.  
H. R. Valentine, c/o M. D. Valentine Bros. & Co.  
Edward S. Roach, c/o M. D. Valentine Bros. & Co.  
Walter G. Dutton, Copley Cement Co.  
Frank B. More, Copley Cement Co.  
Ray Thompson, American Sheet Metal Lath Co.  
Edward H. Jacobson, Tompkins Bros. Co.  
L. F. Jackson, Northwestern Expanded Metal Lath Co.  
Frank H. Holland, Best Bros. Keene's Cement Co.  
Fred W. Schubert, Tompkins Bros. Co.  
I. P. Maloney, Lawrence Portland Cement Co.  
Geo. A. Olsen, ROCK PRODUCTS AND BUILDING MATERIALS, CHICAGO.  
T. J. Connelly, Boston, Mass.  
W. L. Healey, Boston, Mass.  
L. B. Stillman, Sacco Brick Co.  
Ralph C. Smith, Christian Science Monitor, Brick & Clay Record.  
Laforest Beals.  
Geo. H. Quinn.  
G. M. Hall.

# O. B. S. A. Celebrates Tenth Anniversary

Retailers of the Buckeye State Assemble at Secor Hotel, Toledo, for Regular Winter Meeting—W. A. Fay Chosen President.

The tenth annual convention of the Ohio Builders' Supply Association opened in the Secor Hotel, Toledo, Ohio, Thursday morning, Feb. 11, at 10:30 o'clock. The president of the association, Mr. R. E. DoVille welcomed the members and then introduced Mayor C. H. Keller of Toledo, who in addressing and welcoming the association said:

I take pleasure in extending to you the hospitality of the city. It is usually one of the irksome duties of the mayor to welcome visiting delegations and conventions. I wish to assure you that it gives me pleasure to welcome the Ohio Builders' Supply Association. I have more than a passing interest in doing so, in fact I have a real personal interest in doing so. A little over a year ago when I happened to be in Columbus I was asked to invite you to come here this year to hold your convention, and it pleased me greatly to have you accept that invitation. For that reason, gentlemen, I have more than a passing interest—besides that I know a great many of your members personally. I want to say that we have thrown away the keys of the city, and will do everything we can to show you a good time while you are here.

Frank Kinney, of Cincinnati, responded as follows:

I wish to say first that it gives us much pleasure to accept your kind invitation to be your guests here for the next few days, and it is a pleasure to us as members of this association to come here year after year to renew our acquaintances, meeting old friends. It is one of the pleasures of life to meet old friends, and especially such friends as we have here. We builders have a personal interest in homes, and we cannot but appreciate the city of Toledo, and a year ago when we accepted your kind invitation, having heard of the character and reputation of the city of Toledo we knew we would receive a warm welcome here, not only from the officials but from the members of our association. Mr. Kinney then went on to compliment the city of Toledo on the fine schools, industrial and municipal buildings, stating that such buildings indicated the character of the city and its inhabitants. He remarked on the wonderful location of Toledo on Lake Erie, her harbor and the great advantages to be derived from same, and closed by thanking the mayor again for his kind welcome.

The meeting was then addressed by Mr. Edw. A. Roberts, secretary of the Cleveland Builders' Exchange, of Cleveland, Ohio, who spoke on "Organization."

Mr. Roberts showed wherein "organization" is not a modern development, but existed at the time the world was created—saying, "The world itself is a wonderful organization." "Business-getting and profit-making," said Mr. Roberts, "are the two things we are most interested in. How can the association help in the matter of business-getting? In the first place, business-getting depends largely upon salesmanship—every man is a salesman, the doctor who markets his services, the bootblack who markets his shins, the laborer who sells his labor—all are salesmen. Upon what does salesmanship depend? You have heard it said and I have heard it said that it depends upon four things: 1. Get attention. 2. Get interest. 3. Get the desire to have whatever it is you are selling, and 4. (last but not least), Get the signature on the dotted line. That is the theory of salesmanship." Mr. Roberts then gave several unique illustrations of getting attention and business, and then said that every man could help greatly by working with the association for honorable dealing with each other, and for good principles. He said he thought the main trouble with the organization is that selfishness and jealousy are liable to creep in and undermine the strength of the organization. That men should realize that a few men must make the organization go if it goes at all, and they should be backed up by other men to push the organization along.

Mr. Roberts then spoke of the feeling of pessimism which seems to prevail throughout the country, and said that things are not nearly so bad as they might be—that right now is America's greatest opportunity for big business, and as an illustration of his remark that we should smile and be cheerful instead of so pessimistic, said: "They say the English have no sense of humor, and yet even in this terrible time they are able to put out the following notice to induce men to enlist in the army: 'TO BERLIN: The country is arranging a trip to Germany in the spring for a few sportsmen. All hotel expenses and railway fares paid. Good shooting and hunting. Ages 18-35. Rifles and ammunition supplied free. Cheap trips up the Rhine. Apply at once as there is only a limited number (1,000,000) required.'

"How much more had we who are not engaged in this terrible war, ought to be cheerful and optimistic and go around saying, 'Why business is good, things are picking up.' We have no cause to complain, why here is a clipping from a Cleveland paper wherein Cornelius Donahue, statistician of the building department, says: 'I am confident that building activity in 1915 will greatly exceed that of 1914,' and you'll find it that way all over. Business is good in spots and it's going to be better. While it might be lots better, still it might also be lots worse." Mr. Roberts then suggested that it might be a good thing for the association to adopt the slogan "Build Now," and told how the Ohio State Association of Builders' Exchanges had gotten together, taken the matter up with Governor Willis and made the following resolution:

"Resolved, by the Ohio State Association of Builders' Exchanges, That this association emphasizes the fact that the present is an opportune time to start building operations. Many skilled workmen are out of employment, especially in the large cities. Architects and contractors are not rushed with business and better attention can be had from material firms than during the active building season. In some lines concessions are being made in prices to stimulate orders and more accumulating stocks in yards and warehouses. We therefore believe that the State, cities, counties and private owners having any building work to do will profit by having the same done now, rather than delaying until the spring rush is under way."

Mr. Roberts says this resulted in one of the large banks in Cleveland starting their new building immediately, thus

putting a large number of men at work, and advised that the association should adopt and push this slogan to "Build Now." In conclusion Mr. Roberts said he could think of nothing more fitting to say than the following prose poem of Walt Mason:

Talk happiness instead of gloom and keep your face with smiles a bloom. There's so much sorrow everywhere, so much of fear and carking care, that one who would increase the woe we size up as a public foe. Too many people kick and knock; we hear too much depressing talk, too much of doubt and dole and doom—talk happiness instead of gloom! Talk happiness and you will fetch new courage to some hopeless wretch; you'll brace up tired, despondent men so they will get their grip again; the message in your hopeful words will travel faster than the birds and help more people, far and near, than you could number in a year. Oh, get the habit right away, while yet the year is young and gay. Make up your mind to can the whine and keep your eyes from leaking brine, behind your whiskers let there be a smile that speaks of faith and glee. Go down among the croaking boys, and shame them with your cheerful noise, for doubts and fears we'll have no room—talk happiness instead of gloom!

Mr. Frank Mulholland, of Toledo, president of the Rotary Clubs of America was then introduced and gave a most interesting talk.

His one big idea was "Smile!" "Smile!" said Mr. Mulholland, "for when you smile, another smiles, and soon



W. A. FAY, PRESIDENT, OHIO BUILDERS' SUPPLY ASSOCIATION.

there are miles and miles of smiles and life's worth while because you smile." He is also a firm believer in good fellowship, and said that men have not as yet grasped the real conception of "Good fellowship." He said: "Supposing you had to go to New York on business; after being downtown all day working, toward evening you stroll along on Broadway; you don't know a soul, then suddenly across the street you see Bill Smith; you didn't care much about Bill Smith at home; you seldom went to his office, and never to his home, but there across the street in New York he looked like the best friend you had and you rush across to slap him on the back and say, 'Hello, Bill.' I say you should put more of that 'Hello, Bill' spirit into your daily life in your home town."

Mr. Mulholland then explained the difference between a pessimist and an optimist. "An optimist," said he, "sees the doughnut—a pessimist the hole. An optimist will take all the lemons that are handed him in the business world and make for himself delicious lemonade. The pessimist is the fellow who, if he were offered the choice of two evils would grab off both of them. Be an optimist—a booster! Boost your home town—don't be one of the men who take everything a town has to offer and give nothing in return; give a little of your own time and energy and boost! The best place to begin to clean up a town is in your own back yard."

A vote of thanks was extended to the speakers, following which Chairman Jones then outlined the entertainment plans.

President DoVille appointed the following committees: Auditing—Elton R. Seager, Rufus A. Brown, E. W. Hawke. Nominations—W. Rossiter, Fred Crisp, Frank Kinney.

A letter was read from the Cleveland members urging the association to hold its next meeting in Cleveland.

## Thursday Afternoon Session.

The meeting was called to order at 2:30 by President DoVille.

The roll call of members and reading of the minutes was dispensed with.

The president then delivered his annual address.

The committee appointed to investigate the situation of the National Association then reported through Mr. Frank Kinney. Mr. Kinney stated that he believed that the present status of the N. B. S. A. was that it was a real retailers organization and that the Ohio association should continue its present affiliation.

He was supported by Mr. W. W. Coney, Mr. Richard Kind and Mr. Ed Holloway. After a rousing speech by Mr. Richard Kind a motion was adopted that the O. B. S. A. continue and support its present affiliation with the N. B. S. A.

Mr. Kinney moved that a committee be appointed by the president to draft an expression of opinion as to the position of the Ohio Association on the question of the five-cent margin in the sale of cement. The motion was carried and the following committee appointed: Frank Kinney, Cincinnati, O. R. Kuhlman and Ed Holloway.

The Auditing Committee then made its report which was accepted. The secretary's report showed that since last year the membership had increased from 178 to 188.

The convention was then addressed by Hon. Warren J. Duffey of Toledo on the Duffey bill, "The Mechanics Lien Law."

Mr. Duffey stated the original lien law passed in 1896 had been declared unconstitutional by the supreme court a few years ago because there had been no limit to the liability of the owner. Another lien law adopted was incorrect in operation because the money was to go to the contractor, and as some were irresponsible the dealer was still unprotected. At the constitutional convention two years ago the new lien law was proposed and soon after was passed through the legislature, which gave the sub-contractor and building supply man a direct lien on the real estate and its improvements. Ohio is the only state that has such a law, and it was passed unanimously.

For two years this law has been in operation and despite the general depression has shown itself to be of real benefit. Cleveland had \$5,000,000 more permits this year than last and no instance of a bank or anyone losing their money has arisen and practically no owner's rights have been violated. The law has helped everyone in collections and the dealer has the right to collect his money direct from the owner if necessary. As, for example, if a job is started and two weeks later the owner borrows from the bank the money to pay for the house and \$3,000 is lent him on a mortgage. The dealer in building supplies a month later receives the order for material. Later if it is shown that the owner cannot pay his obligations, when the property is sold, the dealer's lien is prior to the bank's mortgage. Mr. Duffey stated that under this law no dealer should lose a cent if the matter is handled correctly. Mr. Duffey believed that the law should stand as it is and urged the members to use their influence against a suggested repeal which has been introduced into the Ohio legislature. The banks and loan associations are active for the repeal. Mr. Duffey suggested that each dealer write to his legislative representatives and urge them to vote against the repeal.

Following Mr. Duffey's speech, the following resolution was proposed by Mr. Elton R. Seager.

Resolved, That inasmuch as the mechanics' lien law has been operative since August, 1913, and having proven beyond question to have given the protection it was intended to give to the construction laborer, sub-contractor and material supply dealers by providing security and protection for the accounts for labor and material used in the improvement of real estate and has been an equitable and satisfactory law to all interests connected with the building industry of the State of Ohio; and inasmuch as we believe that the repeal of the said mechanics' lien law would beyond doubt prove a great hardship to the laborer, sub-contractor and material supply dealers whose labor and material create and finance the improvements upon real estate; therefore, be it

Resolved, That we, the Ohio Builders' Supply Association, being assembled, protest to the legislature of the State of Ohio against any action which might remove the protection now justly enjoyed by the construction laborer, sub-contractor and material supply dealers under the present law, agreeing, however, to any amendments which may better define the position of all parties interested in the provision of the law; and further, that copies of this resolution be sent to each member of the legislature by the secretary, accompanied by a list of the members.

The motion was carried.

The following motions were also offered and adopted.

Resolved, That we, the Ohio Builders' Supply Association, in convention assembled at Toledo, this, the 11th day of February, 1915, do hereby favor the passage of ordinances by municipalities and laws by State legislatures compelling better and safer flue and chimney construction, and that we recommend that fire clay flue linings be used



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**LET US HELP YOU.**

We want employers who are looking for good help to advertise in the "Wanted Employees" column, because we know that they will get good results. ROCK PRODUCTS AND BUILDING MATERIALS.

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A man middle age, single, twelve years' manager and superintendent Stone Crusher Plants and marketing the products. Thoroughly understands installing and maintaining machinery, has made careful studies of efficiency problems and has been successful in obtaining results at a minimum cost of production.

Good judgment in the handling of labor. To make the story short, have played the game from A to Z—don't know it all, willing to learn more. Character unquestioned; can furnish references; personal interview desired. Address Box 1038, care ROCK PRODUCTS AND BUILDING MATERIALS.

**ARE YOU LOOKING FOR EMPLOYMENT?**

A small advertisement in the Employment column will make your wants known and help you to get a position. No difference what kind of a job you want—advertise in ROCK PRODUCTS AND BUILDING MATERIALS, as the paper is read by the people you want to reach. **QUICK RETURNS.**

**CEMENT PLANT SUPERINTENDENT**—Age 36, fifteen years in the business, can come well recommended to anyone needing a capable and efficient superintendent. Address W. T., care ROCK PRODUCTS AND BUILDING MATERIALS.

**WANTED**—Position by sand-lime brick man of many years' experience. Thorough knowledge of manufacturing. Best of references. Address Box 1012, care ROCK PRODUCTS AND BUILDING MATERIALS.

**WANTED**—Position as superintendent; 20 years' experience erecting and operating stone crushing plants. Reference. Address Box 1031, care ROCK PRODUCTS AND BUILDING MATERIALS.

## PLANTS FOR SALE

**FOR SALE ON EASY TERMS.**

The Plant formerly owned by The California Brick and Clay Manufacturing Company, located on the Southern Pacific R. R., one mile south of Antioch, consisting of factory and other buildings, kilns, machinery and dies fully equipped for operation, five acres of land, splendid opening for one who understands the clay business. For particulars address THE BANK OF ANTIOCH, Antioch, California.



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Brown, Black, Red and Buff  
Strongest and Most Durable**

Manufactured by **C. K. Williams & Co.**  
Correspondence Solicited **Easton, Pa., U. S. A.**

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**WANTED**—An experienced man in sand and gravel business to invest \$3,000.00, and take charge of plant. The best of material as per laboratory tests. New machinery. For full particulars address GEO. N. FEALS, 33 Wendall St., Battle Creek, Mich.

**ESTABLISHED COMPANY, WINNIPEG, CANADA.**

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An established and growing coal and builders' supply company, in one of the most desirable cities in Ohio, have an exceptional proposition to offer to some one acquainted with the game, with \$4,000.00 or \$5,000.00 to invest; active or non-active interest. Address Box 1036, care of ROCK PRODUCTS AND BUILDING MATERIALS.

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Four 100 H. P. 6" Atlas Tubular boilers with 40' stacks—30" diameter each.

Eight industrial cars 24" gauge, one ton capacity; side dumps; used only one year.

One 7' Stone coal mine fan.

One switching locomotive tender tank.

48 cast iron gates with frames for stone or coal bins, openings 18"x18", weight 890 pounds each.

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1 22x42 Allis Heavy Duty Corliss Engine.

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1 12x36 Bates Corliss Engine.

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1 14x20 Atlas Automatic Engine.

1 100 K. W. D. C. Generator.

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**FOR SALE**—Best empty cement bag baler, smallest price. Also brick and block machines. Address W. BARTEN, Gordon, Nebr.

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**FOR SALE**—Two second-hand No. 6 Krupp Ball Mills, fully equipped, in excellent condition. SECURITY CEMENT & LIME CO., Hagerstown, Md.

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Warner & Wooster Sts., BALTIMORE, MD.  
Sold to Dealers only A Trial WILL convince you

and that we also recommend that all chimneys and flues, regardless of size, be required to come under the said law.

**Resolved,** That we, the Ohio Builders' Supply Association, in convention assembled at Toledo this, the 11th day of February, 1915, do hereby condemn the acts of city councils and State legislatures in legislating against the use of vitrified pipe for house drain purposes, and that we also condemn the acts of boards of health in municipalities and States in passing rules and regulations eliminating vitrified pipes for house drain purposes.

#### Friday Morning Session.

Invitations were read from the Cincinnati and Cleveland Commercial Associations and Builders' Supply men suggesting that the next convention be held in these respective cities.

The following resolution was offered and passed:

**Be it hereby Resolved,** on this, the 12th day of February, 1915, That it is the unanimous opinion of the members of the Ohio State Builders' Supply Association, in convention assembled, that the policy of the cement manufacturers allowing the sum of 5 cents a barrel to the dealers in handling Portland cement is not consistent with business principles and detrimental to the interests of both the manufacturer and the dealer, and we ask the cooperation of both manufacturers and dealers throughout the country in adopting a more liberal policy.

The following committee was appointed to assist the executive committee in forwarding the spirit of this resolution: Wm. Rossiter, R. A. Brown and W. E. Wright.

The nominating committee made their report, after which the following officers were elected:

President, W. A. Fay, Cleveland.

First vice-president, W. O. Holtz, Toledo.

Second vice-president, J. L. Price, Marion.

Third vice-president, W. E. Wright, Akron.

Fourth vice-president, Rufus A. Brown, Springfield.

Secretary, Frank Kinney, Cincinnati.

Treasurer, J. W. Thompson, Coshocton.

New directors elected—W. W. Coney, Cincinnati, and E. J. Holway, Youngstown.

#### Friday Afternoon Session.

The afternoon session was opened with new president, W. A. Fay, of Cleveland, in the chair.

Mr. John L. Rice, Akron, Ohio, secretary Vitrified Clay Industry, then addressed the convention.

Following Mr. Rice's speech, Mr. Floyd E. Waite, of Cleveland, representing the Society Advocating Fire Elimination, spoke on the subject of "The Supply Dealers' Interest in Fire Elimination."

The association was then addressed by P. A. Jadernal, assistant sales manager Lehigh Portland Cement Co., who spoke on "Modern Ethics of Selling Portland Cement as Regards the Manufacturer and the Dealer."

Mr. Jadernal stated that the cement manufacturers sell largely through the dealers and wish to protect them, the Lehigh company as an example, selling 92 per cent of its output through the dealers. The speaker urged the dealers to have confidence in each other and to hold up their prices, and that in this way they will get a larger margin protection than 5 cents quicker than any other way. Concerning commissions, Mr. Jadernal condemned the practice of a cement manufacturer selling to the contractor and paying the dealer a commission, as it tends to put a dealer in the position of a broker and not a legitimate retailer. He further believed that a dealer should when buying his cement on contract from the manufacturer feel bound to keep this agreement.

Richard Kind, of Toledo, closed the program with an inspiring talk on association ideals and urged the dealers to work together. He also stated that certain standards of membership in association should be held up and that dealers who would not do business in an honorable and business like way should not be allowed to be members.

Motions were then offered and passed thanking the retiring officers for their services and also to the Toledo delegation for their entertainment.

The meeting was then adjourned.

#### The Banquet.

A very successful banquet was held Friday evening at the Elks' Temple, which was largely attended by the dealers, manufacturers and ladies.

#### REGISTERED ATTENDANCE.

J. C. Neely, The J. C. Neely Co., Canton, Ohio.  
C. W. Thompson, A. H. Thompson & Son, Coshocton, Ohio.  
C. R. Brigham, The Atlas Portland Cement Co., Cleveland, Ohio.  
H. J. Palmer, Euclid Builders' Supply Co., Cleveland, Ohio.  
W. F. Erick, Euclid Builders' Supply Co., Cleveland, Ohio.  
Raymond E. DeVille, Ohio Builders' Supply Co., Toledo, Ohio.  
C. B. Rogers, Lehigh Portland Cement Co., Chicago.  
John Mueller, The John Mueller Co., Lockland, Ohio.

B. H. Wess, The B. H. Wess Grain & Elevator Co., Cincinnati, Ohio.  
H. H. Mueller, The John Mueller Co., Lockland, Ohio.  
Claude W. Filer, The National Plasterboard Co., Cleveland, Ohio.  
Elton R. Seager, The Lake Erie Builders' Supply Co., Cleveland, Ohio.  
William A. Rabe, The Kenton Supply Co., Covington, Ky.  
W. H. Settle, W. H. Settle & Co., Cincinnati, Ohio.  
R. W. Holst, Toledo, Ohio.  
F. B. Jones, The Acme Construction & Building Co., Toledo, Ohio.  
F. Lawson Moores, The Moores-Coney Co., Cincinnati, Ohio.  
Fred W. Fogarty, Crouse Clay Products Co., Akron, Ohio.  
John C. Moore, ROCK PRODUCTS AND BUILDING MATERIALS, Chicago, Ill.  
J. R. Paul, The Ironport Portland Cement Company, Ironport, Ohio.  
F. B. Peters, The Lehigh Portland Cement Company, Cincinnati, Ohio.  
Fred J. Crisp, Akron Storage & Contracting Co., Akron, Ohio.  
E. J. Schario, The Kelm Brick & Tile Co., Louisville, Ohio.  
F. H. Kinney, Hyde Park Supply Co., Cincinnati, Ohio.  
F. G. Munz, Buckeye Builders' Supply Co., Toledo, Ohio.  
A. E. Munz, Buckeye Builders' Supply Co., Toledo, Ohio.  
Charles L. Pisor, Thompson-Armstrong Co., Columbus, Ohio.  
Geo. R. Wales, The Clinton Metallic Paint Co., Clinton, N. Y., Indianapolis, Ind.  
Charles S. Robbins, The Wadsworth-Howland Co., Boston, Mass.  
Clarence J. Hunt, The Wadsworth-Howland Co., Boston, Mass.  
E. B. Lawson, Sykes Metal Lath & Roofing Co., Niles, Ohio.  
J. W. Windsor, Houston Bros. Co., Pittsburgh, Pa.  
Edw. A. Roberts, The Cleveland Builders' Exchange, Cleveland, Ohio.



"AL" GALLAGHER IN CONVENTION ATTITUDE.  
DRAWN BY CLAUDE FILER, SALESMAN-CARTOONIST DURING RECENT OHIO MEETING.

E. W. Hawke, American Sewer Pipe Co., Columbus, Ohio.  
A. R. Kuhlman, Toledo Builders' Supply Co., Toledo, Ohio.  
P. H. Degnan, Toledo Builders' Supply Co., Toledo, Ohio.  
E. J. Holway, Youngstown Ice Co., Youngstown, Ohio.  
G. H. Wilson, The Carlon Supply Co., Toledo, Ohio.  
H. S. Buske, Toledo Builders' Supply Co., Toledo, Ohio.  
Charles Schmutz, The Crescent Portland Cement Co., Wampum, Pa., Youngstown, Ohio.  
S. S. White, The Bucyrus Lumber Co., Bucyrus, Ohio.  
Walter Lecher and wife, Bluffton Cement Block Co., Bluffton, Ohio.  
E. Fellabaum, The E. Fellabaum Co., Toledo, Ohio.  
L. M. Seeds, Houston Bros. Co., of Pittsburgh, Columbus, Ohio.  
A. J. Morgan, The France Stone Co., Toledo, Ohio.  
T. H. Machen, The Acme Cement & Builders' Supply Co., Toledo, Ohio.  
C. E. Wegner, Mt. Gilead, Ohio.  
D. J. Miller, Mt. Gilead, Ohio.  
L. W. Rohr, Superior Supply Co., Toledo, Ohio.  
C. T. Bliss, Buckeye Fire Clay Co., Uhrichsville, Ohio.  
J. H. Luten, Toledo, Ohio.  
Rufus A. Brown, Taggart & Brown Co., Springfield, Ohio.  
Gall B. Hamer, Lehigh Portland Cement Co., Columbus, Ohio.  
T. W. Spinke, T. W. Spinke Co., Covington, Ky.  
W. C. Hunter, Columbus, Ohio.  
R. W. Taylor, The Home Fuel & Supply Co., Toledo, Ohio.  
S. P. Gisel, The DeVille Lake Sand & Gravel Co., Toledo, Ohio.  
W. H. Murray, Crescent Portland Cement Co., Wampum, Pa.  
Howard Howard, The Dayton Builders' Supply Co., Dayton, Ohio.  
W. T. Rossiter, The Cleveland Builders' Supply Co., Cleveland, Ohio.  
D. B. Frisht, The Home Fuel & Supply Co., Toledo, Ohio.  
John W. Blake, The Lehigh Portland Cement Co., New-castle, Pa.  
S. G. Powell, The Boettwick Steel Lath Co., Cleveland, Ohio.  
C. W. Capes, J. B. King & Co., Buffalo, N. Y.  
B. W. Kessel, The Lehigh Portland Cement Co., Cleveland, Ohio.  
W. F. Powell, The Atlas Portland Cement Co., Perrys-burg, Ohio.  
E. DeVille, Ohio Builders' Supply Co., Toledo, Ohio.  
O. H. List, Kelly Island Lime & Transport Co., Cleveland, Ohio.  
A. J. Earl, Kelly Island Lime & Transport Co., Cleveland, Ohio.  
Edw. Swessinger, Kelly Island Lime & Transport Co., Sandusky, Ohio.

W. W. Coney, The Moores-Coney Co., Cincinnati, Ohio.  
A. J. McConnell, The Ohio & Western Lime Co., Jackson, Mich.  
J. A. Greiner, The Ohio Builders' Supply Co., Toledo, Ohio.  
W. O. Holst, W. O. Holst Builders' Supply Co., Toledo, Ohio.  
Harry J. Barnes, Ohio Builders' Supply Co., Toledo, Ohio.  
T. L. Hughes, Universal Portland Cement Co., Pitts-burgh, Pa.  
Wm. C. Clark, Clair-Meyer Co., Toledo, O.  
S. J. Vail, The Alpha Portland Cement Co., Easton, Pa.  
E. S. Porter, The Patent Vulcanite Roofing Co., Cin-cinnati, Ohio.  
S. P. Harris, Springfield Coal & Ice Co., Springfield, Ohio.  
Lee B. Woodworth, Universal Portland Cement Co., Toledo, Ohio.  
A. C. Armstrong, The Thompson-Armstrong Co., Cin-cinnati, Ohio.  
E. F. Gregg, The Toledo Pulp Plaster Co., Toledo, Ohio.  
E. F. Eggeman, The Buckeye Builders' Supply Co., To-le-do, Ohio.  
Paul H. Jadernal, Lehigh Portland Cement Co., New-castle, Pa.  
D. K. Thompson, Jr., The Thompson-Armstrong Co., Cincinnati, Ohio.  
S. C. Rosche, The Crescent Portland Cement Co., Wam-pum, Pa., Cincinnati, Ohio.  
Elihu Harpham, Buckeye Sewer Pipe Co., Akron, Ohio.  
W. A. Fay, The Cuyahoga Builders' Supply Co., Cleve-land, Ohio.  
J. H. Wadfield, The Thompson-Armstrong Co., Toledo, Ohio.  
Paul Wagner, Cincinnati, Ohio.  
O. C. Maurer, The Woodville Lime & Cement Co., Toledo, Ohio.  
W. E. Sherer, American Cement Plaster Co., Toledo, Ohio.  
L. E. Fishback, American Cement Plaster Co., Toledo, Ohio.  
Carl H. Keller, Toledo, Ohio.  
J. A. Montgomery, Eureka Stone Co., Newcomerstown, Ohio.  
G. L. Dimmick, Jr., The Ohio-Michigan Sand & Gravel Co., Toledo, Ohio.  
A. V. Kellogg, The National Plasterboard Co., Cleveland, Ohio.  
R. G. Crawford, W. O. Holst Builders' Supply Co., Toledo, Ohio.  
C. E. Beims, W. O. Holst Builders' Supply Co., Toledo, Ohio.  
Wade Crilly, The Bailey Coal Co., Mansfield, Ohio.  
M. C. V. Stevenson, The Acme Cont. & Builders' Supply Co., Toledo, Ohio.  
Arthur R. Black, American Gypsum Co., Port Clinton, Ohio.  
Richard Kind, Toledo Builders' Supply Co., Toledo, Ohio.  
J. P. Degnan, The W. O. Holst Builders' Supply Co., Toledo, Ohio.  
Martin Linger, Hamilton, Ohio.  
Henry Angel, Cleveland, Ohio.  
P. E. Simmet, The National Roofing & Supply Co., Cleveland, Ohio.  
S. C. Kelly, Kelly Plaster Co., Sandusky, Ohio.  
J. A. Gelsmar, The National Supply Co., Toledo, Ohio.  
John C. Dennison, The National Mortar & Supply Co., Pittsburgh, Pa.  
H. R. Zorn, The National Mortar & Supply Co., Gibs-on-burg, Ohio.  
F. J. Wertlewski, Michigan Portland Cement Co., Gib-sonburg, Ohio.  
B. B. Turnbull, Chelsea, Mich.  
John L. Rice, The Vitrified Clay Industry, Columbus, Ohio.  
H. B. Hecock, Elyria Lumber & Coal Co., Elyria, Ohio.  
W. C. St. Clair, The Castalia Portland Cement Co., San-dusky, Ohio.  
J. J. Urschel, Woodville Lime & Cement Co., Toledo, Ohio.  
S. O. McFall, The Robinson Clay Products Co., Akron, Ohio.  
E. J. Jenkins, Cincinnati, Ohio.  
James L. Whitman, Wapakoneta, Ohio.  
Milton Yoder, The Belle Center Lumber Co., Belle Cen-ter, Ohio.  
James Flood, W. O. Holst Builders' Supply Co., Toledo, Ohio.  
Charles Kuhlman, Toledo Builders' Supply Co., Toledo, Ohio.  
H. I. Brungart, Grand Rapids Plaster Co., Columbus, Ohio.  
W. E. Myers, Peerless Coal & Supply Co., Lima, Ohio.  
J. J. Johnson, Johnson & Ritz, Napoleon, Ohio.  
L. G. Love, Crescent Portland Cement Co., Wampum, Pa.  
Fred Ritz, Johnson & Ritz, Napoleon, Ohio.  
J. C. Leaker, Castalia Portland Cement Co., Lima, O.  
H. W. Catlin, U. S. Gypsum Co., Cleveland, Ohio.  
A. B. Hays, The Robinson Clay Products Co., Akron, Ohio.  
F. R. Peters, The Dennison Sewer Pipe Co., Uhrichsville, Ohio.  
J. W. Laidlay, H. M. Reynolds Shingle Co., Columbus, Ohio.  
J. L. Price, J. L. Price Co., Marion, Ohio.  
C. A. Owens, John D. Owens & Son Co., Owens, Ohio.  
C. B. Elwood, The Ohio & Western Lime Co., Jackson, Mich.  
L. P. Baier, Carbon Coal & Supply Co., Toledo, Ohio.  
F. S. French, Ohio Builders' Supply Co., Toledo, Ohio.  
M. L. Prentice, Castalia Portland Cement Co., Castalia, Ohio.  
F. J. Griswold, American Gypsum Co., Port Clinton, Ohio.  
D. N. Goodman, The Master Builders' Co., Cleveland, Ohio.  
R. G. Kerlin, American Pipe & Tube Co., Toledo, Ohio.  
Ben Baum, Toledo, Ohio.  
W. S. McCameron, L. H. McCameron Bros., Cincinnati, Ohio.  
Henry H. Meyer, Clark-Meyer Co., Toledo, Ohio.  
C. G. Spencer, National Lime & Stone Co., Carey, Ohio.  
Earl F. McGruer, Superior Portland Cement Co., Cin-cinnati, Ohio.  
B. W. McCausland, Jr., The U. S. Gypsum Co., Cleveland, Ohio.  
A. H. Gallagher, National Retarder Co., Chicago, Ill.  
O. F. Sloop, The U. S. Gypsum Co., Cleveland, Ohio.  
John Devon, The Illinois Leather Co., Chicago, Ill.  
A. H. Lauman, The National Mortar & Supply Co., Pitts-burgh, Pa.  
Floyd E. Waite, Society Advocating Fire Elimination, Cleveland, Ohio.  
R. C. Stoddard, Society Advocating Fire Elimination, Cleveland, Ohio.  
H. S. West, Toledo Builders' Supply Co., Toledo, Ohio.  
E. R. Lytle, Lytle Lumber Co., Deshler, Ohio.  
C. A. Brown, Houston Bros. Co., Pittsburgh, Pa.  
C. A. Watts, Haskins, Ohio.  
J. E. Rheimer, The Clover Leaf Railway, Toledo, Ohio.





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**Sold Thru Dealers**

**Wheeling Wall Plaster Co.**

**WHEELING, W. VA.**



SALES OFFICE:  
Liggett Bldg., St. Louis



SALES OFFICE:  
Long Bldg., Kansas City

MANUFACTURED BY

**Union Sand & Material Co.**

ST. LOUIS  
Liggett Bldg.

KANSAS CITY  
Long Bldg.

MEMPHIS  
Tenn. Trust Bldg.

**THE  
Standard  
Brands**

**OF  
Portland Cement**

**Lightest in Color  
Highest Tensile Strength**

**ALWAYS UNIFORM**

Always the same high quality. Prompt shipment guaranteed at all times and made possible, as each mill is located within switching limits of the two greatest railroad centers of the West. You are assured of your orders being promptly filled.

## Reduce Your Operating Expense

by using Wire Rope that will do the most work for each dollar of its cost. This can be accomplished by the use of



because **Hercules** Wire Rope not only has great strength, but it is also elastic, flexible, tough and durable.

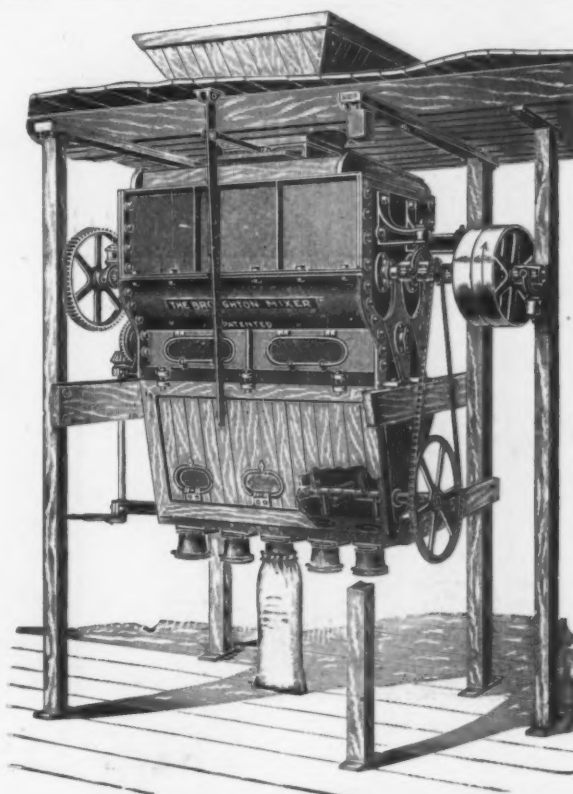
When you buy **Hercules** Rope you are not experimenting, for it has been proving its durability by actual service for many years.

**Hercules** Wire Rope is always made with one red strand for identification purposes.

Established 1857

**A. Leschen & Sons Rope Co.**  
**St. Louis, Missouri**

New York Chicago Denver Salt Lake City San Francisco



**The most thorough and efficient  
Mixers of Plaster, Cement and  
Dry Materials. Send for Circular.**

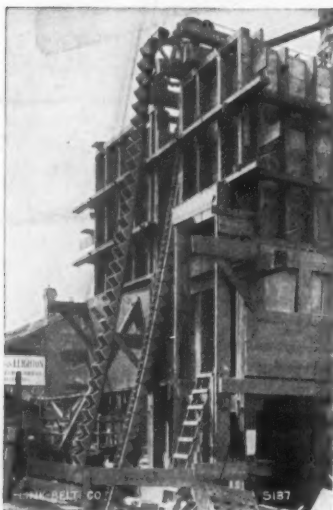
**W. D. DUNNING, Water St., Syracuse, N. Y.**

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

# Link-Belt Machinery

is designed and built for speed and economy in  
elevating and conveying all kinds of material for

## Contractors and Producers



### Contractors Equipment

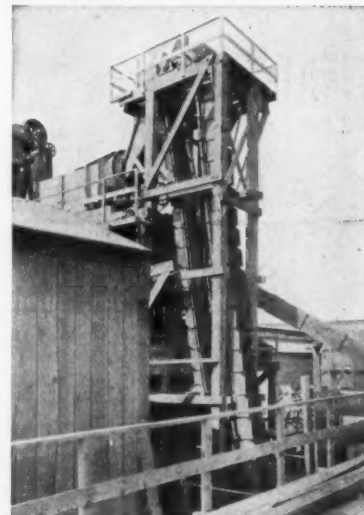
A single strand Ley chain continuous bucket elevator, used by Irwin & Leighton, Philadelphia.

The savings over manual labor is very apparent, yet it is a modest equipment which can be used just as effectively by the small contractor.

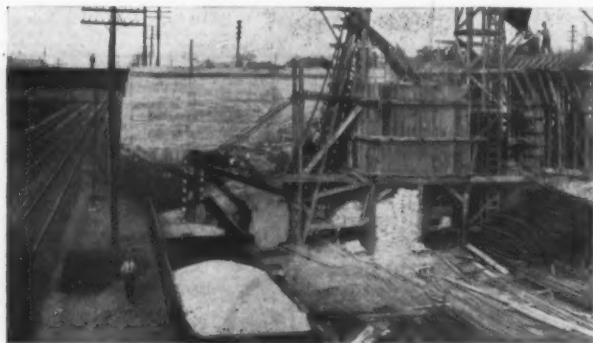
### Producers Equipment

Built for large capacity at slow speed, and long life.

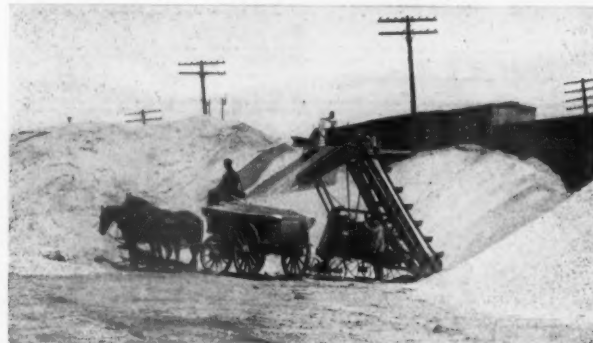
Continuous elevator, handling 300 tons per hour, consisting of 30-inch buckets attached to 2 strands of 24-inch pitch chain, and discharges to a rotary screen. Note the absence of tracks. The chains are guided by large flanged rollers.



**We Plan and Build Complete  
Your Entire Conveying Equipment**



**Link-Belt Car Unloader, Stationary Type**—With two men trimming to the foot of the bucket elevator in the car, this outfit replaced six shovelers formerly required to unload the material.



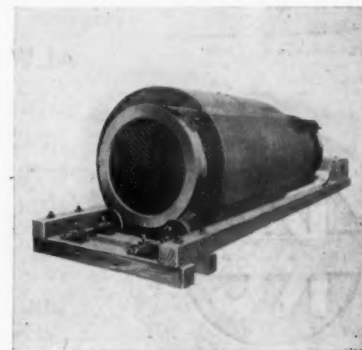
**Link-Belt Portable Wagon Loader**—Loads stone, sand, gravel, etc., at the rate of one ton per minute. Catalog on request.



**Belt Conveyor for Stone**—Write for Catalog 79



**Cement Bag Elevator**



**Revolving Screen**

## LINK-BELT COMPANY

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New York.....290 Broadway  
Pittsburgh.....1501 Park Building  
Boston.....49 Federal St.  
St. Louis.....Central Nat'l Bank Bldg  
Buffalo.....698 Elliott Square  
Wilkes-Barre.....2nd Nat'l Bank Bldg.

### CHICAGO

Detroit.....911 Dime Bank Bldg.  
Cleveland.....1304 Rockefeller Bldg.  
Seattle.....590 1st Ave. South  
Los Angeles.....204 N. Los Angeles St.  
Denver.....Lindrooth, Shubart & Co.  
Minneapolis.....Link-Belt Supply Co.  
New Orleans.....Whitney Supply Co.

### INDIANAPOLIS

San Francisco.....N. D. Phelps, Sheldon Bldg.  
Birmingham.....General Machinery Co.  
Brantford, Can.....Waterous Eng. Works Co.  
Montreal, Can.....Williams & Wilson, Ltd.  
Portland, Ore.....14th and Lovejoy Sts.  
Toronto, Can.....Can. Link-Belt Co., Ltd.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

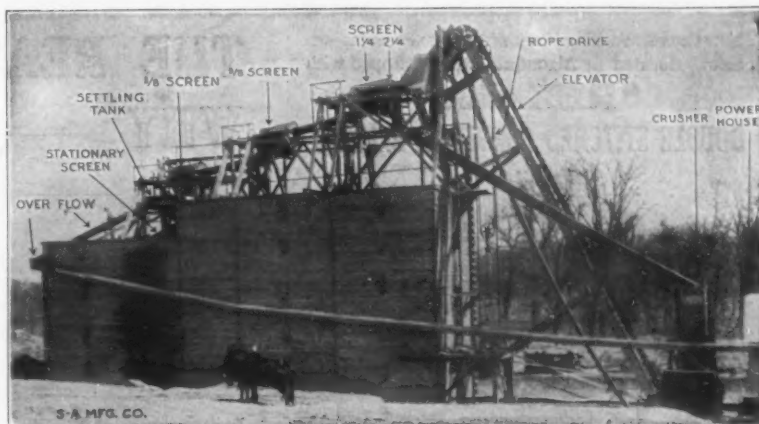


## From the Smallest Plant to the Largest

There are now in operation somewhat over 250 "S-A" Gravel Washing Plants, and the interesting fact in this connection is that **all** of these plants have been **financially successful**. A large number have doubled, many have quadrupled, and at least one is now six times as large as originally erected. And all of these extensions have been paid for out of the profits. If you are considering the erection of a gravel plant, does not this record of "S-A" designed and equipped plants appeal to you?



*The plant, shown below, is the largest gravel washing plant in the world, having a capacity of 3,000 yards per day. It was the fourth "S-A" Plant erected by this same Company.*



The plant, shown above, was designed and built for a market capacity of 120 cu. yds. per day with an allowance for future increases. In one year, the plant had to be increased to handle 300 cu. yds. daily, and later to 450 yards, all extensions being paid for out of the season's profits. The product is washed absolutely clean in "S-A" Gilbert Screens and is in great demand.

**"Labor Saver" No. 66 gives some new ideas on surplus storage. Write for your copy.**

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NEW YORK    BOSTON    CHICAGO    LOS ANGELES  
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We design and manufacture conveying machinery for rock crushing plants, gravel washing plants, storage systems, etc. Also transmission and screening equipment, elevators, gates, feeders, car pullers.

WRITE US FOR PRICES ON

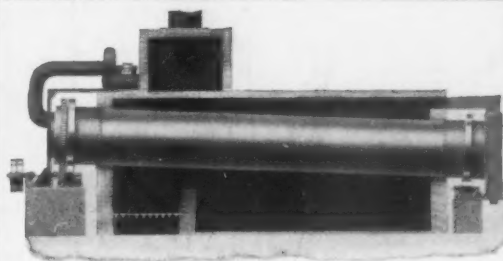
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Lime, Cement, Plaster, Ground Stone, Fertilizer, Etc.

**The Urschel-Bates Valve Bag Company**  
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[Address all communications to the company at Toledo, Ohio.]  
BRANCH FACTORIES: Niagara Falls, Ontario, Can., Pittsburgh, Penn.



We make the largest variety of  
**MECHANICAL DRYERS**

Write for  
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Car Hauls    Feeders  
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Soft Mud Brick Machinery    Screens

**THE C. O. BARTLETT & SNOW CO., Cleveland, Ohio**



**SAME  
Maumee Compound**

For water-proofing cement  
but a new price

**4c Per  
Pound**

**The Maumee Chemical Co.**  
PORT CLINTON, OHIO  
Formerly — TOLEDO, OHIO

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

New Gravel Washing Plant of Reinert Bros. (shown below), located at Algonquin, Ills., equipped with

**"REXALL"**

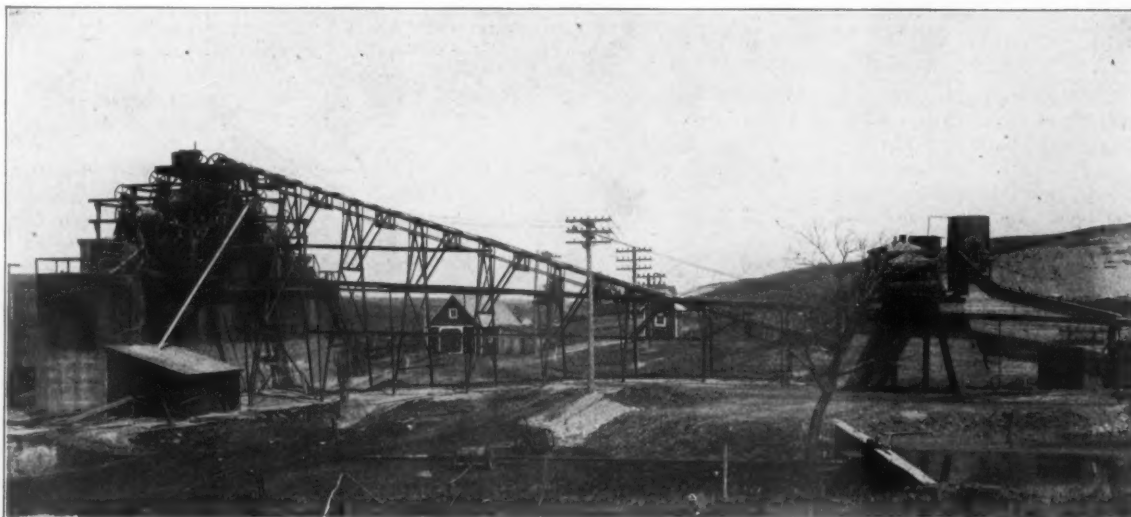
DOUBLE STITCHED CONVEYOR BELTING

**THE REASON  
WHY** 

Four years service given at former plant of this company at South Elgin, Ills., equipped with 30"

**"REXALL"**

DOUBLE STITCHED CONVEYOR BELTING



MANUFACTURED BY

**IMPERIAL BELTING CO. CHICAGO**

**CHAN-NE-LATH**

## A Complete Line of Metal Lath from a Single Maker

—Think What That Means to You, Mr. Dealer!

If you handle the North Western line of Metal Lath, you can meet *all* the requirements of *any* customer through a single manufacturer. This means just one account on your books instead of several and you know that simplified book-keeping saves money.

Including our new product "Chan-nel-Lath" there are fifty-six styles of lath in the North Western line for you to choose from, varying in weight, in mesh, size and in finish (plain, painted, galvanized, etc.)—and all are made with the famous "Kno-Burn" mesh that makes the plaster stick.

*Write us today for details about our newest product, Chan-nel-Lath, and price list on our full line.*

**56  
Styles  
in These  
4 Brands**

*Kno-Burn*

*Kno-Fur*

**XX Century**

**North Western  
Expanded Metal Co.**  
929 Old Colony Bldg. - CHICAGO, ILL.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



## January Shows 26 Per Cent Decrease.

Building construction in the principal cities of the United States for January shows a decrease of 26 per cent in comparison with the corresponding month a year ago. Permits were taken out in 107 cities according to official reports to Construction News for the construction of 13,343 buildings at an estimated cost of \$40,689,893 for the month just closed, as against 15,806 buildings involving a total cost of \$55,307,053 for the same month a year ago, a decrease of 2,463 buildings and \$14,617,160, or 26 per cent. The most satisfactory feature of the situation is the fact that there are marked indications of improvement in New York City, there being an increase in the month just closed of 76 per cent over the same month a year ago. The greatest activity in building outside of the largest cities is in New England, New Jersey and Ohio. The figures in detail are as follows:

Cities.	No. of Bldgs.	1914 Estimated Cost.	No. of Bldgs.	1915 Estimated Cost.	% Gain.	% Loss.
New York (Boros Man. and Bronx).....	439	\$10,373,354	640	\$ 5,529,394	76	..
Chicago.....	478	4,387,902	320	4,784,000	..	9
Boston.....	243	2,408,000	241	6,632,000	..	64
Waterbury, Conn.....	374	1,945,300	618	1,800,200	3	..
Brooklyn.....	395	1,394,450	720	2,436,200	..	35
Detroit.....	344	1,417,390	402	2,529,200	..	42
Huntington, W. Va.....	738	1,138,497	794	1,175,330	..	2
Cleveland.....	498	1,116,080	557	1,396,620	..	14
St. Louis, Mo.....	338	1,094,672	496	854,122	..	22
San Francisco.....	505	1,006,942	398	7,349,816	..	56
Philadelphia.....	657	910,805	865	1,947,965	..	27
Los Angeles.....	722	860,360	855	1,182,246	..	27
Schenectady.....	239	827,650	15	24,305	2,320	..
St. Paul.....	91	699,238	111	514,312	26	..
Toledo.....	105	537,297	125	234,894	128	..
Minneapolis.....	208	485,190	261	501,305	..	4
Baltimore.....	334	480,095	364	1,790,351	..	72
Washington, D. C.....	349	470,328	368	461,700	2	..
Pittsburgh.....	183	465,461	145	1,171,027	..	60
Cincinnati.....	32	451,530	1,029	350,910	..	22
Seattle.....	682	405,585	634	1,206,530	..	66
Buffalo.....	190	381,000	187	386,000	..	27
Portland, Ore.....	348	378,040	503	444,600	..	15
Albany.....	160	340,290	109	149,005	128	..
Newark, N. J.....	117	329,508	134	350,306	..	2
Hoboken.....	11	320,885	12	64,480	421	..
Oakland, Cal.....	204	291,539	226	257,786	12	..
San Diego.....	150	289,982	124	285,085	..	21
Louisville.....	74	277,480	153	303,250	..	8
Indianapolis.....	194	266,907	291	481,850	..	44
Springfield, Ill.....	74	266,063	54	266,063	..	30
Rochester.....	124	246,717	124	354,320	..	87
Milwaukee.....	75	203,649	136	471,838	..	20
Denver.....	164	177,635	290	229,330	..	22
Cedar Rapids.....	17	168,000	69	169,000	..	56
Omaha.....	45	165,073	79	180,440	..	3
Richmond, Va.....	78	159,540	198	233,336	..	31
Savannah, Ga.....	62	152,750	86	180,025	..	15
New Orleans.....	14	146,900	36	304,051	..	28
Hartford.....	47	139,265	58	256,887	..	46
Saginaw.....	30	143,794	27	20,050	867	..
New Haven.....	68	132,150	60	264,320	..	59
Norfolk, Va.....	34	110,864	54	120,763	..	68
Memphis.....	116	101,953	225	361,390	..	17
Troy.....	49	100,014	14	15,845	417	..
Bridgeport.....	48	95,112	28	127,235	..	38
Spokane.....	14	92,185	34	34,045	171	..
Salt Lake City.....	47	85,650	44	121,850	..	39
Columbus.....	69	85,100	138	178,740	..	22
Berkeley.....	67	82,750	68	95,750	10	..
Elizabeth.....	26	82,314	21	47,879	70	..
Grand Rapids.....	78	80,072	81	341,240	..	77
Worcester.....	87	77,876	74	530,184	..	85
New Bedford.....	49	75,500	71	368,984	..	79
Pasadena, Cal.....	116	74,779	123	138,807	..	42
Faterson.....	41	73,595	27	39,841	146	..
Youngstown.....	31	73,350	45	69,267	6	..
Birmingham.....	205	72,178	255	850,230	..	71
Lincoln, Neb.....	17	70,156	19	76,150	..	8
Springfield, Ill.....	10	69,410	11	29,410	186	..
Evansville, Ind.....	24	69,050	38	70,256	..	2
Erie.....	49	66,309	43	60,773	9	..
Tampa.....	124	66,112	135	181,240	..	68
Superior, Wis.....	35	65,930	21	30,775	114	..
Quincy, Mass.....	41	59,605	38	66,850	..	11
Tacoma.....	99	59,598	116	109,103	..	45
Nashville.....	116	56,037	50	102,269	..	45
Akron.....	46	55,835	98	128,150	..	69
Des Moines.....	34	53,250	34	35,400	26	..
Lawrence, Mass.....	10	48,375	12	30,850	153	..
Brooklyn.....	22	48,275	24	30,640	..	50
Niagara Falls.....	17	44,885	23	71,350	..	27
Montgomery, Ala.....	28	40,635	22	38,880	4	..
Binghamton, N. Y.....	37	39,994	30	39,597	..	12
Scranton.....	38	39,170	44	191,995	..	82
Bayonne.....	19	38,000	7	30,574	85	..
Trenton.....	68	36,812	37	47,113	..	22
Kansas City, Kans.....	48	35,690	73	57,870	..	38
Fort Wayne.....	18	35,100	18	35,250	..	..
New Britain, Conn.....	35	35,095	..	37,215	29	..
Wilkes-Barre.....	33	34,643	30	105,109	..	66
Wichita, Kans.....	21	33,300	13	19,005	..	..
Canton, Ohio.....	22	31,175	11	11,300	178	..
Dayton.....	19	30,000	37	84,785	..	65
Chattanooga.....	128	29,143	169	55,170	..	47
Fitchburg, Mass.....	19	26,350	4	6,700	276	..
Sioux City.....	16	24,950	39	70,125	..	64
San Jose.....	26	24,156	15	24,713	..	2
Stockton.....	39	24,040	44	25,425	7	..
East St. Louis, Ill.....	18	22,025	37	47,525	..	61
Altoona.....	10	22,355	18	10,923	12	..
Pasadena.....	14	20,410	13	8,500	149	..
Woonsocket, R. I.....	7	19,500	7	11,000	77	..
Peoria.....	9	17,600	56	178,300	..	90
Haverhill, Mass.....	10	15,400	8	40,300	..	61
Portland, Me.....	11	15,065	14	91,050	..	83
St. Joseph, Mo.....	19	12,820	34	48,500	..	74
Auburn.....	10	10,600	..	1,850	473	..
Colorado Springs.....	21	7,665	18	36,495	..	79
Harrisburg, Pa.....	9	7,575	11	28,750	..	74
Reading, Pa.....	9	5,900	12	414,975	..	99
Butte.....	8	3,980	10	16,250	..	61
Hamilton, Ohio.....	7	3,631	13	20,659	..	83
Terre Haute.....	8	2,400	83	15,460	..	84
West Hoboken, N. J.....	5	1,860	6	5,550	..	66
Bay City.....	4	1,550	17	15,400	..	98
Totals.....	13,343	\$40,689,893	15,806	\$55,307,053	..	26

There were increases in 34 cities and losses in 73. Notable among the cities of the central west is the increase of 28 per cent in St. Louis and 36 per cent in St. Paul, while Toledo, Ohio, shows a gain of 128 per cent. Other increases were in widely scattered cities, including Waterbury, Conn., 8 per cent; New Britain, Conn., 29; Fitchburg, Mass., 276; Schenectady, 2,320; Troy, 417; Albany, 128.

## Meeting of West Virginia Dealers.

The first annual meeting of the West Virginia Lumber and Builders' Supply Dealers' Association, will be held in the Chancellor Hotel, Parkersburg, West Virginia, on March 10 and 11, 1915.

This association was organized April 4, 1914, having had no state organization of this character prior to that time. It has grown in strength and membership fairly well, considering the fact that, as yet, very little membership work has been done. It has, at this time, over 100 members. It is incorporated under the laws of the state of West Virginia, and hopes to become one of the largest organizations of the kind in the country, as all builders' supply dealers within the state are eligible.

The dealers throughout the state are being invited to attend this annual whether or not they are members of the association.

## Eastern Pennsylvania Meeting.

(Continued from page 26.)

The next speaker was Walter Dutton, sales manager of the Coplay Portland Cement Co., who said in part: "The greatest trouble in the past with the cement business has been the question of differential. If dealers should get together and arrive at some solution of what they want done they will get it done." He emphasized the fact that a dealer should be recognized as a dealer regardless of the size of the order, and asked the question, "Why not protect the dealer on everything?"

B. L. Swett, Eastern sales manager of the Lehigh Portland Cement Co., spoke of the differential and said that one price must be observed to the contractor and another to the dealer. Retailers must look after brother dealers in other sections of the country and must eliminate the competition of manufacturers. He declared that dealers can help the manufacturers by standing firm for one price.

Dwelling on the same thought President Erich said that dealers must be fair with the manufacturers if they expect the manufacturers to give them full consideration.

J. L. Durnell declared that manufacturers of Portland cement should "get down to a principle," as he termed it, in selling their product. He stated that manufacturers should sell to dealers and not sell to anyone else.

Luther Kellar also spoke on this subject and asked the manufacturers to leave contractors alone on 1,000 barrel orders and less and he was sure that personally he would be able to take care of his local conditions.

President Erich called on G. A. Olsen, of Rock Products and Building Materials for a few remarks before adjournment. The speaker urged the dealers to put more faith in each other as well as in the manufacturer in order that all business might be conducted to the best possible advantage of every one engaged in the manufacture and distribution of building materials, especially cement. He put special emphasis upon the fact that many opinions held by dealers are largely the result of false statements on the part of unscrupulous contractors and other consumers and the real sufferers in the case are the makers and sellers.

The meeting then adjourned to meet again next May in the city of Philadelphia.

## ATTENDANCE.

Partial attendance at the meeting was as follows: Col. C. T. O'Neill, Lehigh Portland Cement Co., Allentown, Pa.  
C. B. Fry, Keystone Plaster Co., Philadelphia, Pa.  
M. H. Horn, Atlas Portland Cement Co., New York City.  
Luther Kellar, Scranton, Pa.  
A. H. Hornisch, Bath Portland Cement Co., Philadelphia, Pa.  
Joseph C. Sequine, J. B. King & Co., New York City.  
A. E. Daley, J. B. King & Co., Philadelphia, Pa.  
J. L. Durnell, Charles Warner Co., Wilmington, Del.  
F. M. Traynor, Lehigh Portland Cement Co., Allentown, Pa.  
Charles A. Miller, C. D. Miller & Son, Reading, Pa.  
J. Allison Gring, J. M. Gring Co., Reading, Pa.  
John H. Holmes, J. B. King & Co., Philadelphia, Pa.

C. Downing, Niagara Gypsum Co., Buffalo, N. Y.  
G. F. Erich, G. F. Erich Co., Allentown, Pa.  
W. L. White, Paragon Portland Cement Co., Bloomsburg, Pa.  
M. M. Swarr, Lancaster Lime & Cement Co., Lancaster, Pa.  
Edward Seanning, Vulcanite Portland Cement Co., New York City.  
Schiele Brothers, Girardville, Pa.  
Henry A. Reninger, Lehigh Portland Cement Co., Allentown, Pa.

## Philadelphia Lime Manufacturers Entertain.

An annual dinner and entertainment was given by the Lime Manufacturers' Association of Eastern Pennsylvania to retailers in Philadelphia and the territory adjacent thereto on Tuesday evening, Feb. 16, at Kugler's restaurant, Philadelphia. Fully 180 lime men sat down to the special mutton chop-dinner which was guaranteed strictly neutral, "in spite of the 'English' chop."

In addition to the splendid menu which was headed with a martini cocktail and Jersey Coast salt oysters on the shell, and contained everything good to eat down to the demi tasse, there was a program of theatrical stunts which would give credit to any high-class vaudeville theater. In fact, practically all of the sketches were taken from local theaters and worked in so completely as to give the lime men one continuous round of laughter. There was ragtime on the piano; and there was ragtime on the violin; there was fancy dancing and some good singing, in addition to the very entertaining work of an itinerant street yodler and other star numbers.

Before and after the banquet the reception hall on the second floor of the restaurant building was filled with persons who had arranged to get away from the thoughts of lime and kindred building materials and devote the entire evening to nothing but enjoyment. That they succeeded was demonstrated by the many thanks and congratulations extended to the arrangement committee, consisting of John P. Coghlan, Henry A. Gawthrop, and Fred A. Daboll. Mr. Daboll was chairman of the committee and about the busiest man in Philadelphia. The program and menu were largely the result of his work. He also succeeded in inducing a quartette of men attending the banquet, headed by Harry Moore, who led in the singing of a number of banquet favors.

## Wisconsin Material Dealers Meet

Lumber and building material dealers from all over Wisconsin were in attendance at the twenty-fifth annual convention of the Wisconsin Retail Lumber Dealers' Association, held at the Hotel Pfister, February 16, 17 and 18. The building material dealers of the state do not have a separate organization, but all the progressive retailers are affiliated with the lumber dealers' organization, regarded as one of the most enterprising and progressive in the Northwest.

As the convention marked the rounding out of a quarter of a century of useful activity, Secretary Adolph Pfund, of Milwaukee, and the directors had arranged a program of more than ordinary interest. The subject of fire prevention was one of the leading topics discussed. It was apparent at the convention that the lumber and building material dealers are earnestly in favor of fire prevention.

"Practical Work—the Lost Chord in the Lumber Business," "Correct Computation of Overhead and Net Profit—the Basis of Every Truly Successful Business," "Points in the Lien Law that Require Particular Observance," "Advertising by Retail Lumbermen in the Local Newspaper," were some of the leading topics discussed at the gathering. Two of the meetings were opened with moving pictures of decided interest to the dealers. The entertainment feature of the convention occurred on Wednesday evening, when the visitors were entertained with a theater party at the Majestic.

# Concrete Institute Holds Eleventh Convention

Members of the Technical Society and Others Interested in the Uses of Cement Assemble to Hear Progress of the Year's Activities.

The eleventh annual convention of the American Concrete Institute was called to order by President Richard L. Humphrey at 10:15 A. M. Tuesday at the Auditorium hotel, Chicago, Ill.

L. E. McGann, commissioner of the board of public works of Chicago, welcomed the delegates to the city in the name of His Honor the Mayor. Mr. McGann outlined the evolution of the sidewalk system in Chicago from the old plank walk and cedar block pavements to the present system of concrete. "In studying the lines of efficiency and getting results," Mr. McGann said, "material men and our leading engineers of buildings should inspire the artisan and the laborer to take an interest in the work they are doing, and demonstrate to them in a practical way the benefits and profits to be derived through following such a course of procedure."

President Humphrey thanked Mr. McGann for his remarks, which were greatly appreciated by those attending the session.

Percy H. Wilson, secretary of the Association of American Portland Cement Manufacturers, Philadelphia, Pa., gave a review of present practice in concrete road construction, illustrated with stereopticon views. He stated that the reports submitted by the road assistants of the various highway commissions were of especial interest to the Portland cement manufacturers, as such reports showed whether the concrete road is giving good results or not.

In answer to a question as to the best way to repair a concrete road when it gets worn, Mr. Wilson said that the matter of repairs depends a great deal on the nature of the foundation. Some concrete roads can be repaired with asphalt, tar and sand every two or three years, but such practice must be kept up. Another method of repairing is to chip out the concrete in squares where holes are visible, and replace with concrete.

The next subject on the program was a paper by William H. Connell, chief of the bureau of highways and street cleaning, Philadelphia, Pa., entitled "The Service Test Concrete Road in Philadelphia." In the absence of Mr. Connell, Charles L. Fish, assistant secretary of the American Concrete Institute, read the paper, which was listened to with close attention and elicited many favorable comments.

John Mueller, civil engineer of New Castle, Ind., then addressed the convention on the subject of "Reinforcing Narrow Concrete Roads." The speaker recommended reinforcement for pavements classified as city streets and said that where reinforcement has not been done cracks appear in the concrete. The primary reason for using reinforcement in narrow roads is to eliminate or reduce to a minimum all cracks. He said that poor results are obtained when pavements are laid on fresh cuts or fills, as it is impossible to secure a subgrade which is not liable to settle.

Mr. Wilson wanted to know how the reinforcement matter is handled, which elicited the response that it is determined scientifically the correct amount of reinforcement to be used.

Mr. Mueller stated that there are eight experiments in progress along this line at the present time. Some of these are six months and some twelve months old, but it is expected that within the next six months some tangible results will be obtained along the lines of the amount of reinforcement needed for repairing cracks.

After some further discussion on the subject, a motion was made, seconded and carried that the board of direction appoint a special committee to investigate and report on the location and amount

of reinforcement necessary for revetment work.

The convention then adjourned until 3:00 P. M.

## Tuesday Afternoon's Session.

President Humphrey's gavel fell promptly at 3 P. M., and the first paper on the program was one on "Cost of Construction and Maintenance of Concrete Roads," by H. J. Kuelling, county highway commissioner, Milwaukee, Wis. The speaker outlined the method of repairing roads and stated that the cost of maintenance varies according to the wearing qualities of the concrete.

The question was asked Mr. Kuelling what he thought was an equitable profit for contractors in the construction of concrete roads, and he remarked that in his opinion something like 15 per



LEONARD C. WASON, PRESIDENT-ELECT AMERICAN CONCRETE INSTITUTE.

cent on the labor and a little less on the material, probably 10 per cent, would be fair enough, or about 12 per cent of the total cost of construction, after allowing for all contingent expenses.

President Humphrey read a communication received from the Western Society of Engineers congratulating the American Concrete Institute on its eleventh anniversary and inviting the members of the institute to attend the meeting of the Engineers' Society on Monday, Feb. 15.

Charles E. Russell, city engineer of Highland Park, Ill., addressed the members on the subject of "The Construction of Integral Curbs," his address being illustrated with stereopticon views. Mr. Russell handled his subject very fully and his talk was greatly appreciated.

"Comparative Cost of Concrete Roads" was the subject of an address by Percy H. Wilson, secretary of the Association of American Portland Cement Manufacturers. Mr. Wilson made his talk very interesting with the aid of stereopticon views. The speaker impressed on his audience the necessity of the concrete contractor being very careful in making bids on jobs and looking into their aggregates before bidding, and being sure the materials they are getting will make an absolutely first-class concrete road.

Assistant Secretary Charles L. Fish read a paper by Andrew M. Lovis, first assistant engineer of the Massachusetts highway commission, Boston,

Mass., on "Concrete Roads and Frost Action." It was a very able paper and was listened to with close attention.

Wm. M. Kinney submitted the report of the Committee on Concrete Roads, which caused considerable discussion and brought out many suggestions which will be incorporated in the report, the result of which will be published in the Bulletin of the American Concrete Institute.

The meeting then adjourned until 8:00 P. M.

## Evening Session.

Tuesday evening's session was devoted to the reading of the following papers:

"Test of a Reinforced Concrete Slab Bridge," by E. B. McCormick, mechanical engineer, Office of Public Roads, Washington, D. C., who outlined various tests carried out on a reinforced concrete slab to determine the load which it would carry.

Nathan C. Johnson, of the Raymond Concrete Pile Co., New York City, gave an illustrated lecture on the microscopic study of the hydration of Portland cement, with special reference to the durability of water concretes. The illustrations showed the appearance of concrete particles after the action of water, and the grouping of cement particles in concrete.

C. B. McCullough, designing engineer of the Iowa State Highway Commission, Ames, Iowa, gave an interesting talk on "Standard Designs for Concrete Highway Bridges and Culverts," which was illustrated with stereopticon views.

The above addresses were of a very instructive nature, and the discussion which followed each talk demonstrated the interest manifested by those present.

## Wednesday Morning's Session.

The proceedings of the American Concrete Institute were continued at 10:00 a. m., Wednesday. President Humphrey rapped for order promptly at the appointed hour, and a fair number came to attention at the sound of the gavel.

The first subject on the program was the report of the committee on standard specifications for concrete highways, bridges and culverts, which was submitted by Willis Whited, chairman of the committee. The report was discussed at considerable length by the members, and various suggestions were made, which will be incorporated in the report. The full report will be printed in the Journal.

A. E. Lindau, chairman of the committee on concrete and reinforced concrete, submitted the report of this committee, which was made very interesting by the use of stereopticon views, showing results of tests which had been carried out by the committee. Discussion on the report was postponed until today.

The convention then adjourned until 3:00 o'clock.

## Wednesday Afternoon's Session.

Wednesday afternoon's session was a continuation of the papers and discussions on concrete construction in general, which had begun with the opening of the day's meeting.

F. C. Wight, chairman, gave the report of the committee of nomenclature. In opening his remarks, he stated that the work of the committee was largely academic and not intended as standard specifications. He stated that the elements of concrete construction could be divided into five definitions—concrete, cement, aggregate, reinforcement and general terms. In speaking of the definition of aggregate he stated that it is different all over the country and a general definition cannot be arrived at. He said though that sand of one-fourth inch graded to three inches would be



acceptable; the gravel definition includes the material which is brought from the gravel bank. He believed that paste mixture of a workable but not liquid state was preferable, and advocated the publication of the findings of the committee in the Journal for the purpose of having it discussed by the members.

Mr. Kinney believed that the matter should be given consideration before publishing. He said that the United States army had spoken against slag cement and stated that Puzzolan was used as a slag cement.

President Humphrey explained that Puzzolan came from the town of Puzzolan and that the army was mistaken in its policy. He said the publication of the committee's report would be necessary as it was the only way of transmitting information.

The suggestion was made that a committee work with committees of other technical societies operating along the same lines with special reference to the standard specifications of sand. The question was asked if grout was a mixture of cement and water. The speaker explained that sand could be used in the mixture and still be grout. The questioner desired to know how it would agree with the English methods and was answered to the effect that the report on London very rarely resembled anything in this country and that the British books have so many strange terms that nothing helpful on the subject could be gotten out of them.

Professor Talbot believed that the committee should make some other form of definition on concrete. He said that in reinforced concrete where it is not a deficiency in one way or another it would be unfortunate to state that steel supplies the deficiency in stress.

The speaker stated that he would be very glad to get another definition which would answer the criticism. C. A. P. Turner asked what should be done in concrete columns, stating that it is assumed that the bond between concrete and metal is such as to make the two act as a homogenous solid. He said that the bond cannot be accounted for without considering a combination of the materials in which the concrete is imbedded.

Mr. Wight suggested that the report be held up for a month and have the members write in concerning it, amending his motion to say that it will be published in the April Journal. This motion was carried.

The report of the committee on insurance, of which J. P. H. Perry was chairman, was read in his absence by Secretary Krauss. It was stated that a complete report could not be given at this time showing the fireproofness of concrete structures but that the committee was firmly of the opinion that concrete successfully resists fire, citing its action at Salem and the recent Edison conflagration.

W. M. Kinney then read the report of the committee on concrete roads as follows:

#### Specifications for Reinforcing.

"Concrete roadways 20 feet or more in width shall be reinforced with metal fabric.

If of woven wire, the heavy or longitudinal wires shall be not less than No. 10 gauge, spaced 4 inches apart, and the cross or connecting wires not less than 12½ gauge, spaced 4 inches apart; these wires having an elastic limit of not less than 70,000 pounds per square inch in tension, and shall bend 180 degrees around one diameter and straighten without fracture, fabric being placed so the heavy wires go crosswise of the road.

Fabric may be woven either in triangle or square shape.

If the fabric is made of any other form of metal, an equivalent area of steel shall be furnished to give equal strength of the woven wire fabric, and shall have the same value in bending."

Mr. Kinney called attention to the fact that

the specifications provide a lighter reinforcement from that now called for in the present specifications.

It was suggested from the floor that it might be a mistake to incorporate standard sizes of wire in the specifications.

President Humphrey stated that the chair understood it would be referred to the committee for consideration and a motion was made and carried that this should be done. The committee report was approved and will go out for letter ballot.

Sanford E. Thompson, consulting engineer, Newton Highlands, Mass., spoke extemporaneously on "Design and Construction of the Massachusetts Institute of Technology Buildings," which was illustrated by stereopticon views. He confined his remarks to the structural features of the building, paying particular attention to the study of investigations. The buildings are now under process of erection and are being constructed with concrete, except the stairways, which are of steel. The concrete is faced with Indiana limestone.

Speaking of the test, he said that the cement tests were made at the mill. Before starting the work, cylinders 8 by 16 inches were made to determine the crushing strength. It was decided to use a mixture for the footings of 1:2:4 and 1:1:2 for the setting of the buildings. The relation of the proportion of sand and gravel was avoided in practice so as to make the maximum density. A mixture of 1:1½:3 was selected for the structure proper.

The tests of the sand showed an average of 91 per cent for three days and 100 per cent for seven days. The standard requirements call for 70 per cent for three days and 85 per cent for seven days. Tests were also made in the field. The buildings were subdivided into six sections, two samples of concrete being taken for each and one sample taken at the expiration of 14 days, another at 28 days. The tests of concrete were as follows: The average at 14 days, 1:2:4, was 1,640 pounds; at 28 days, 2,010 pounds. For the 1:1½:3, 14 days, 2,008 pounds; 28 days, 2,520 pounds. Each was an average of nearly 100 specimens. Between the 14 and 28-day periods there was an increase of 22 per cent in strength in the former mixture and 25 per cent in the latter.

A series of beam tests were made showing that the ultimate load for beams was 93 pounds for twisted steel and 60 pounds for the smooth. The beams with the twisted steel also showed the cracks to be more uniform and better distributed. The speaker believed that it seemed safe to adopt the figure of 18,000 pounds because the concrete takes up part of the tension. Tests of hoop bars were also made to decide what method should be used to bend the bars. In the determination of live loads it was brought out by the speaker that the actual stress of a slab designed for 18,000 pounds will not be more than 8,000 pounds and the cracks will not be objectionable.

The question was asked as to what method was used to get away from dust. The speaker answered that a stiff mix was used which practically eliminated the fine material by using sand which has scarcely anything below a 30 mesh.

Mr. Condon called the attention of the speaker to the Edison fire, stating that the spalling of the square column occurred everywhere, without exception, regardless of the extent of the fire. Mr. Thompson stated that he believed the square column to be the best.

Albert T. Goldbeck, engineer of tests, Bureau of Surveys, Philadelphia, Pa., read a paper on "Tests on Egg-Shaped and Circular Reinforced Concrete Sewer Pipe," in part, as follows:

Two kinds of pipes were made; one was circular in cross-section, 36 inches in diameter and four inches thick, and the other was egg-shaped, having a long diameter of 36 inches, a short diameter of 24 inches, and was three and one-half inches thick. The egg-shaped section was provided with a flat base, eight inches wide.

The materials used in the manufacture were a well-known brand of Portland cement from the Lehigh Valley district which satisfactorily passed the standard tests. New Jersey bank sand and well-graded ¾-inch crusher run

trap. In a few of the pipes, crushed shale of undesirable qualities was used, but as it was not suitable, its use was discontinued. Four experimental sections were also made of concrete containing ¾-inch graded, air-cooled blast furnace slag having a weight of 74.7 pounds per cubic foot, when shaken to refusal in a cubic foot measure. The concrete was machine mixed in the approximate proportions, 1:2:3½.

The pipes were reinforced with triangular mesh placed one and one-quarter inches from the inner surface. The tensile strength was 80,000 to 90,000 pounds per square inch.

After pouring in special steel moulds, the pipes were allowed to harden, some of them under atmospheric conditions, others when subjected to a hot vapor bath continued for a period of about 12 hours. The application of hot vapor at a temperature of about 100 degrees F. accelerates the hardening and permits of the removal of the forms on the day after pouring without danger of injury to the pipe during the removal. It thus permits the manufacturer to economize on moulds. It likewise enables him to make pipes in freezing weather. After the moulds were stripped the green concrete was kept damp by daily sprinkling for one week.

Two methods of bedding the pipes were employed (a) damp sand bedding and (b) bedding in a concrete cradle. Three inches of sand or concrete was used under the pipes extending on each side to a height of one-fourth of the vertical diameter. Where a sand bedding was used, the pipe was placed on the layer of lightly-tamped sand and sand was heaped and tamped around the sides to the proper height. In the case of the concrete cradle bedding, the pipe was placed in the soft concrete and it remained there until tested. In some cases the cradle was only one day old when the pipe was tested, but generally was older than this.

The load was transmitted to the specimen under test through a cushion of dampened sand contained in a bottomless box resting on the specimen. The box was properly braced with tie-rods to prevent its spreading under load. A wooden plunger, carrying a timber platform, rested on the sand and the load was obtained by piling bags of cement on the platform. This method was adopted in the absence of a testing machine of the desired type and capacity. It was a very expensive method but was quite effective. The loads were applied at the rate of 10 bags (950 pounds) in about five minutes and vertical distortion readings were taken after each 10-bag increment. Plates I and II and the photographs show the method of loading in detail.

It was the aim to test a single pipe of each kind at the age of 7, 14, 21 and 28 days, bedded in sand and concrete and cured with and without steam, and this program was followed as completely as weather and other conditions would permit. The pipes were placed in their cradle at least one day before testing. Vertical distortion readings were not taken until the sand box and loading platform were mounted into place, and the initial readings were made under the weight of sand box and platform loading.

After each increment of 950 pounds, distortions were read, and the surface carefully searched for hair cracks.

Considering first the unsteamed pipes, it will be seen that stiffness is gained with age, and the load under which the first hair cracks became visible likewise advances with the age of the pipe. This is to be expected, and is in agreement with other tests on reinforced concrete. Note the great increase in stiffening resulting from the use of a concrete cradle rather than sand bedding. As an accompanying result, cracking occurs at a much higher load when a concrete cradle is used than where the pipe is merely bedded in sand. This is true of egg-shaped and of circular sections, but is particularly true of the circular pipes. It was required by the city specifications that the pipes be able to withstand an external load of 1,000 pounds per square foot without showing cracks. This was a reasonable requirement for the conditions under which the pipes were laid. It will be noted that the circular sections embedded in sand, when unsteamed, are unable to pass the specifications at 7 and 15 days and lie uncomfortably close to the requirements at 21 days. When a concrete cradle is used, however, no difficulty whatever is encountered in exceeding the loading requirements. In constructing a sewer of circular pipes such as these, with a likelihood of their being subjected to a load of 1,000 pounds per square foot, a concrete cradle, extending in height one-quarter of the diameter of the pipe above the base is recommended as necessary in order to avoid cracks.

As might be expected, the egg-shaped pipes were stiffer than the circular pipes, and were not afforded as much extra support by the concrete base as were circular pipes. However, even in the egg-shaped sections, the extra stiffness and resistance against cracking provided by the concrete warrant its use.

A comparison of the steamed and unsteamed pipes is of interest. There seems to be an indication that the steam cured pipes, that have had their setting accelerated, are more uncertain in their strength at the later periods than are the pipes cured under normal conditions. The strength of the normally cured pipes follows a fairly definite law of increase in stiffness with age. The steam cured pipes on the other hand are extremely erratic, some of the older pipes exhibiting less stiffness than those of lesser age. The steam method of initial curing is open to some question, and if allowed, should be very carefully controlled in order not to drive out the moisture from the concrete before the cement has attained its set.

The behavior of the experimental pipes made with blast furnace slag coarse aggregate is interesting in indicating that the strength and stiffness of the pipes of this material equaled or even slightly exceeded those of pipes made with crushed trap.

It is highly undesirable to subject a reinforced concrete sewer pipe to a load such that hair cracks are likely to form, because of the danger of corrosion of the reinforcing metal that must result. That circle which causes a visible hair circle to form is therefore to be regarded as the ultimate strength of the pipe, even though the load necessary to cause actual collapse may be much higher.

When a concrete cradle is used, the first crack almost invariably occurs at the top, and is sometimes accompanied by side cracking on the outside. Cracks do not form at the extreme bottom when the pipe is bedded in concrete, although under very high loads, and after all other cracks have formed at the top and sides, inside cracks will develop just above the level of the concrete cradle. A very green concrete cradle, even when not more than one day old, adds greatly to the strength of the pipe.

The following conclusions seem warranted:

1. Reinforced concrete pipes, when properly made and properly cured, are very satisfactory for the construction of sewers.

2. The use of a concrete cradle greatly increases the stiffness of the pipe and raises the load under which initial cracking takes place.

3. For sections of the size tested and for smaller

sections the placing of the reinforcing near the inner face throughout the entire circumference seems to be justified.

4. The matter of curing should be very carefully controlled, as much stronger pipes will result if care is taken to keep them thoroughly wet, preferably for a period of two weeks.

The manufacture of concrete pipe is a process that can be controlled very precisely, and the character of the concrete produced should be much superior to that made in the average concrete construction. The quality of the various materials available should be very carefully investigated before use. Much can be done toward producing stronger concrete by the selection of first class sand and coarse aggregate. But the manufacturer should not stop at merely obtaining satisfactory constituent materials; he should go further. He should find out by very simple density tests how he should combine these constituent materials in order to obtain with them concrete of the greatest density and greatest strength, for it must be emphasized that dense concrete is vitally necessary for concrete sewer construction.

#### Evening Session.

The president's annual address entitled, "The Progress of a Decade," was the feature of the evening session. It really amounted to a lecture upon the subject of the origin of cement and its development up to the present time. Such a thing could not be produced so well perhaps by anyone so well as President Humphrey. Using this as an introduction, he followed with a detailed epitome of the really wonderful achievements of the American Concrete Institute from its inception ten years ago down to the present convention. During the period the production of Portland cement in America has grown to be larger than that of any country, and about equal to the total production of all the other countries of the world. The speaker defined the Institute as "a technical organization not dominated in any way by commercial interests; its work is educational in developing correct practices and standard specifications and in disseminating a knowledge of the proper uses of cement." In reviewing the finances, the speaker developed the necessities of the Institute which make the raising of the annual dues to \$10 imperative. In closing, Mr. Humphrey warmly appreciated Leonard C. Wason as a most devoted supporter of the Institute, and asked that the supreme office and honor of the organization be extended to him in the presidency.

C. A. P. Turner, consulting engineer, Minneapolis, Minn., next read a paper entitled "Basis of Current Practice in Design of Reinforced Concrete Structures," which follows, in part:

The universally accepted basis of reinforced concrete design may be summarized in the following stock quotation from building codes; see the Chicago, San Francisco, Columbus codes, or those of other cities:

"The adhesion is such as to cause concrete and steel to act together"—

or

"The bond between the concrete and the steel is such that the two materials shall act as a homogeneous solid."

Adhesion or bond is thus generally accepted as the connecting link between the concrete and the metal and we should naturally expect to see its operation discussed in all the literature of the art found in text books and the like.

The problem of the continuous flat slab of reinforced concrete is one which the writer has studied continuously for something like seventeen years, and it is needless to say this study from the scientific viewpoint has not been unaccompanied by many investigations and tests of finished structures. Incidentally the writer has many times designed reinforced concrete floors with two-way continuous beams from supports to support and made many tests of such structures, and has also built and tested simple beam structures where the work covered single spans as well.

In any structure in which there is combined stress or stress of the same kind acting in two directions it is a well known fact that these stresses tend to reduce each other or increase the resistance to deformation by mutual action.

Grashof undertook to account for this relation in the operation of a homogeneous plate by the general equations of internal stress and the introduction of Poisson's ratio. In the reinforced concrete plate we have only an imitation of the homogeneous plate. The Poisson effect, or the increased resistance by the co-action of stresses in different directions, would not be a property of either the concrete or the metal but a function of their co-action arising from indirect tensions and compressions due to bond shear.

Dr. Eddy has accounted for the department of such reinforced concrete plates in a very satisfactory manner by taking a co-efficient representing the lateral action as 5. This step in Dr. Eddy's mathematical solution has been treated by some members of the engineering profession as involving the mystery of Poisson's ratio, in which they have no faith at all. Let us see how far the Doctor's mathematics is affected by Poisson's ratio.

The working stress is also reduced in the same ratio. This does not account for a difference of approximately three hundred per cent found in the deflection formula for the continuous beam and the continuous slab and we must turn back to the bond shear relations which I have pointed out in order to understand the matter clearly.

It has been noted that these empirical co-efficients are such that the stiffness of the continuous beam when combined integrally with a slab is six times as stiff as a simple beam, its stiffness having been increased by the slab with which it is combined from being five times as stiff as a simple beam, as it is in general case of a continuous beam, to six times as stiff, as it is in this case.

This relation can be best understood by consideration of the theory of work discussed very fully in the recent treatise by Dr. Eddy and the present writer which has been already referred to, in which is shown that where circumferential resistance act in circles about the tops of the columns energy is stored in such a manner that it does not affect the vertical geometry of the slab. When, however, the panel is rectangular these resistances act in ellipses about the column tops and the energy is no longer stored in a manner which does not affect the vertical geometry of the floor but it does affect it to a considerable and increasing extent as the panel becomes more and more oblate.

Comparing the continuous plate with the simple beam, the continuous plate with the same cross section of steel at mid span in the square panel, assuming that Poisson's ratio equals zero, is by the theory of work approximately six times as strong and twenty times as stiff as the simple beam with the same cross section of steel and thickness of slab and a span equal to the diagonal of the panel.

The absurd character of the regulations in vogue in many cities will become apparent from these relations which have been presented in a simple manner from the standpoint of experimental evidence from hundreds of tests and from the standpoint of theory of work, assuming Poisson's ratio equals zero, as well as from the consequences derived from the general equations of equilibrium of an infinitesimal element in which the lateral effects are given proper consideration in the mathematical determination of deflections and stresses from one and the same formula.

The law governing the mode of operation of the connecting link between the concrete and metal determines the limiting steel ratios. We have 50 per cent of the building codes in the United States requiring 50 per cent more steel than is necessary to develop the concrete used in the continuous slab on column supports. Here, then, is an opportunity for economy without reduction in the safety of the structure.

The Chicago code while requiring computed steel stresses 100 per cent at mid span greater than determined by test, allows in a light rectangular slab a thickness so small that the true concrete stresses may under test be at least 50 per cent higher than would be computed. This relation is brought about by an irrational comparison of the rectangular slab with a square slab having a side equal to the average of the long and short sides of the panel. The gross error involved is evident from the deflection formula given and the well-known relation of steel stress to deflection in any fixed arrangement of steel.

In the design of simple slabs or wide beams there is hardly a code that I have examined which would not under the rules followed literally permit double the amount of steel to be used which an experienced engineer would employ to develop the concrete element. Here is an opportunity for the regulations of our cities to be greatly improved, because these rules are supposed to govern the conduct of those who are lacking in experience as well as those who have had the benefit of this experience and the structures figured under the letter of the law may prove unsatisfactory.

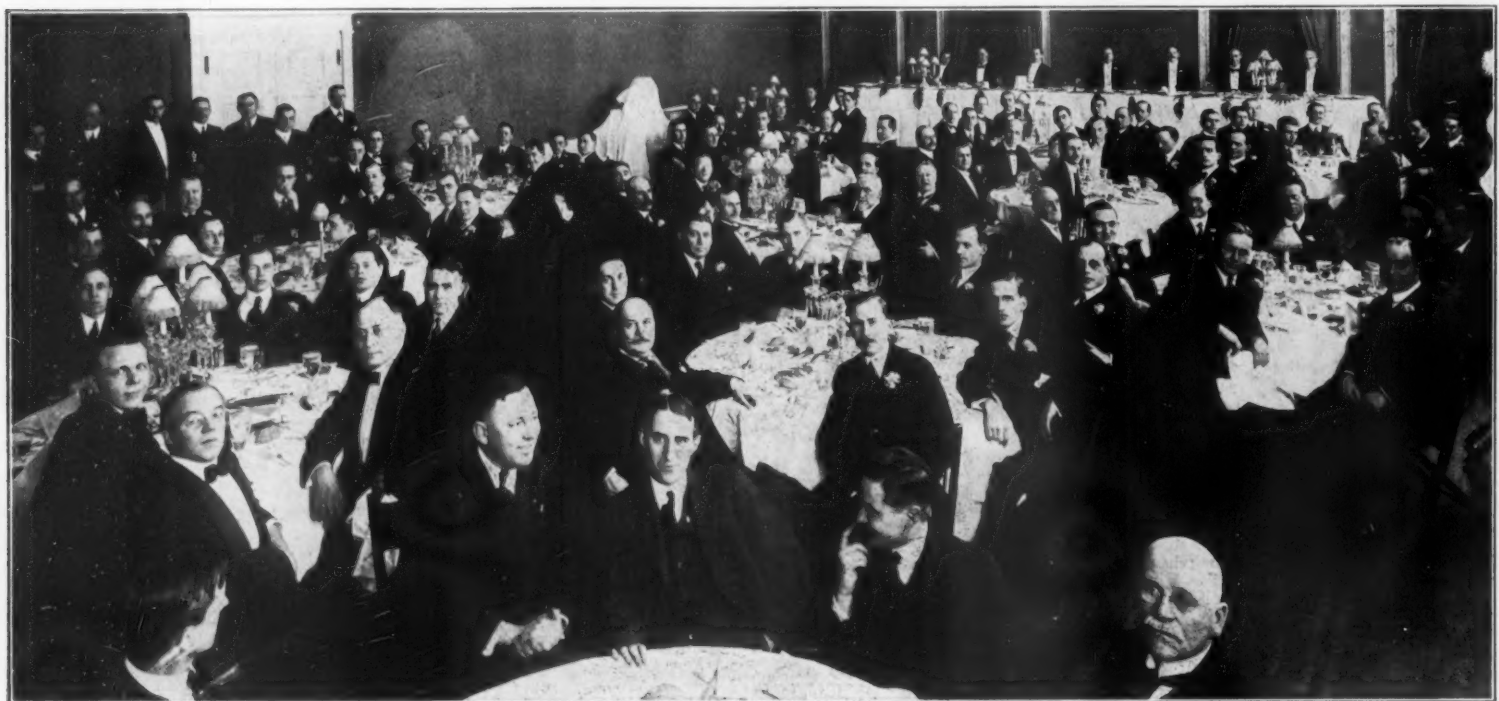
In the provisions for shear little attention has been paid to the difference in the horizontal shearing deformations of the continuous and the simple beam. This has been discussed quite fully by Eddy and Turner in their treatise, and it has been shown that the continuous beam is capable of resisting double the shear that the simple beam can carry.

Having discussed briefly beam action and slab action, it is next in order to consider the question of columns. The variation in the regulations of different cities amounts to more than 100 per cent in the amount of material required in the construction of columns for the same load. Such a variation cannot evidently be based on any rational hypothesis.

The American Society Joint Committee has rules governing column design which render such columns as were designed in the Edison factory more economical to build than tough, strong, reliable hooped columns such as are usually built in the western cities and particularly in the northwestern sections of the United States and Canada where the enhanced safety in cold weather work coincident to this form is recognized and appreciated. The rules devised by the Joint Committee seem to be based on tests so conducted as to preclude or prevent the coaction of the concrete and metal. That is, test data have been secured from test specimens in which the longitudinal steel and concrete were made to bear equally on the face plate of the machine. The results from such tests can evidently have no relation whatever to the strength developed in a column of a building properly designed.

The committee on concrete and reinforced concrete of the Canadian Society of Civil Engineers have exhibited a higher order of mechanical intelligence in their rules relative to the design of columns than have the committee of the American society, since they permit reasonable working values which encourage the design of columns well hooped and vertically reinforced.

The great divergence found in test results of columns was the subject of careful consideration by the writer for several years and formulas which would fit test results were found only by taking into consideration the end



THE Highbrow Banquet, where there was a bully good time.



condition of the vertical steel. This has been discussed quite fully in the recent treatise by Eddy and Turner.

Edwin Godfrey, structural engineer, Robt. W. Hunt & Co., Pittsburgh, Pa., read his paper, "A Critical Review of Current Practice in Reinforced Concrete as Embodied in Building Regulations and the Joint Committee Report," in part as follows:

Mark Twain once said that he had nothing against the German language, he would just like to reform it. I have nothing against reinforced concrete, I would just like to reform it. At the outset I wish to make two statements that no sane engineer can contradict. The first is, there are entirely too many failures in reinforced concrete construction; the second is, there has been entirely too little attention paid to these failures. Practically all the reinforced concrete failures have been due to faulty design, and generally the design is standard design, accepted by the profession. Every reinforced concrete wreck has violated one or more of the principles of good design.

I have been held up as the arch enemy of reinforced concrete because I have unequivocally held that all the big wrecks are due to bad design. Men who believe they are friends of reinforced concrete have generally strenuously held that the designs of the wrecks were without flaw. Has it never occurred to you gentlemen that the man who, after investigating a complete failure of a reinforced concrete structure, pronounces the design faultless, has said the very worst thing that he could say against reinforced concrete as a form of construction.

There has been some sporadic reform in reinforced concrete design but it has been in the practice of some engineers and it has not been in building codes or regulations.

I will cite a few tests, but so far as I know there are no recent ones to cite. Investigators are getting wise to the fact that the rod-ded column is no longer seriously defended by engineers who value their reputations. The rod-ded column is wrong from every point of view. Increasing the size or reducing unit stress does not remedy it. It is wrong to allow any compression whatever on slender rods in concrete, and standard works that recommend from 39 to 50 per cent of additional load for every one of steel be allowed are simply committing egregious errors.

The hooped column, besides being a true reinforced concrete member, has a factor of safety against a fire which is characteristic of all true reinforced concrete. A fire would have to burn a long time before the outer shell of concrete over the hoop would be destroyed. Water on the hot shell might cause it to break off, but still the rods would be there confining the inner concrete core and the carrying capacity of the column would be great.

Prof. Talbot, during the discussion of Mr. Godfrey's paper, said:

"The joint committee report was not intended to be a treatise on engineering. It deals with the elements that go to make up good structures. The joint committee does not allow plain columns. The reinforced column has its place in reinforced concrete construction. It helps to unify the action of the column as it passes down through to effect the stiffness of the concrete in different places, doing this work through the action of the rods in going from one point to another. It also takes stress on its own account.

"The joint committee report requires that the bar at the bottom of the column should be able to take the stress and that at other points through the column where there is a splice, it should be made by a butted joint. The tests show that this steel takes stress. Tests have been made which show that about 3,400 or 3,500 pounds per square inch give a resistance of about 1,700 pounds per square inch. I believe that the Edison fire failure was due to the form of the column, causing it to spall off. I think anybody who has visited that plant will have a great deal higher respect for concrete than before. Shear and spalling off in joints come after the maximum load, and breaking off of the column also comes after the maximum load has been reached. The maximum load is governed by the amount of spiral reinforcement and by the ultimate strength of the spiral hoops. The spiral column, 25 diameters long, has only about the same ultimate strength as a plain column.

#### Thursday Morning's Session.

Thursday morning's session of the American Concrete Institute began promptly at 9:00 A. M. and there was a much larger representation on hand than was expected in view of the strenuous proceedings of the night before when the discussion carried the session along until after 1:00 A. M.

The Report of the Committee on Cement Products, C. K. Arp, chairman, was the first order of business, which will be published in a subsequent regular edition.

L. J. Mensch, contracting engineer, Chicago, Ill., next read a paper on "A New-Old Theory for Re-

inforced Concrete in Bending," which was illustrated with stereoscopic views.

Many investigators hold that the limit of resistance of a beam is reached when the tensile stress of the reinforcement reaches the yield point of the material, which for mild steel is about 39,000 lbs. per sq. in., and yet they advocate a safe unit stress of 16,000 lbs. per sq. in. on the tension reinforcement, evidently for no other reason than to obtain working formulas somewhat compatible with the results of their tests.

This theory is wrong because:  
1. A plane section before bending is greatly distorted after bending. This was first discovered by Prof. Schuler, of Zurich, in 1901, and later by other investigators by means of extensometer readings between horizontal points 2 to 6 in. apart and at 5 to 13 positions in a vertical line on the height of the beam, and they found that the extension of the steel fibres was a multiple of that which it should be on the plane section theory.

The author wishes to repeat that the yield point in the reinforcing bars is considerably exceeded at the ultimate load, and, therefore, in beams having several layers of reinforcing bars, the reinforcement stress will vary only very little, although the bars are placed at different distances from the neutral axis, and this requires that the theoretical depth of such a beam should be assumed as the distance of the center of gravity of the reinforcing bars from the top of the beam.

Although cinder concrete has a modulus of elasticity of about one-third that of gravel concrete, the cinder concrete beams were just as strong as those of gravel concrete of the same compressive strength, proving that the carrying capacity of a beam depends nearly entirely on the compressive strength. There are very few test data published showing pure tension failures, and lack of time compels the author to confine the proofs of the tests he has at hand.

A business session was then held with the result that the dues were increased to \$10 per year.

President, Leonard C. Wason of Boston.

Vice-President, Wm. K. Hatt of Lafayette, Ind.

Vice-President, Henry C. Turner of New York.

Treasurer, Robert W. Lesley of Philadelphia.

#### Directors.

First District—Wm. H. Ham, Boston, Mass.

Third District—Ernest Ashton, Chicago.

Fourth District—A. E. Lindan, Chicago.

Fifth District—Wm. P. Anderson, Cincinnati, Ohio.

#### Afternoon Session.

The afternoon session convened at 3:00 P. M. and was opened by the reading of a paper by Irving K. Pond, architect, Chicago, Ill., entitled, "Concrete; A Medium of Aesthetic Expression."

Though the use of concrete goes back into antiquity, plastic architecture would seem to be in the veriest infancy, and would seem also to be asking the genius of this age to give it perfect expression and make it worthy to stand with the architecture of the past and the yet-to-come. Though the past be examined for precedent, little will be found. Rome used concrete in bulk—but undeniable evidence of a scientific use of the material is wanting. Rome applied superficially the arts of other times and countries, but of itself left to posterity only monuments expressive of a highly temperamental force, breathing little or nothing of spirituality. Persia covered with stucco or veneered with beautiful tiles her masses of crude masonry. The Arabians and the Moors expressed their emotionalism in a plastic architecture decorated with a skim coat of ornamental plaster or an incrustation of tile, intricate in pattern and beautiful in color. The concrete of the mass was but mud, and the science of building was unknown. In such material beautiful day dreams were realized only to crumble when the spell was past. The Spanish missions were built with rare feeling for mass and light and shade; but feeling swayed and science did not guide. With the science of today to guide and the art experience of the past to illumine, into what logical, noble and beautiful forms should not concrete shape itself, to the end of an enduring, spiritualized architecture.

The possibilities, even the aesthetic possibilities, within the range of reinforced concrete construction can hardly be overestimated. Little beyond the introductory chapter has been written in the history of reinforced concrete, and every advance in the science of its manufacture and use will signal an advance along the line of artistic application. Except in well-defined types, designed to serve certain well-defined uses, it is impracticable so to carry masonry construction beyond and behind the facade as to result in a homogeneous structure—wanting which architecture becomes but a hollow sound. The architecture of a reinforced plastic material may, and logically will, express itself throughout the entire structure to the remotest core. The unity, the truth, the harmony of the whole may in every part be manifested. Therefore, again, the possibilities inherent in concrete present themselves alluringly to the architect to whom the art means as much as does the science of building.

It is not inconceivable that ornamental terra cotta and tile, beautiful in color and texture, and also sculptured stone will be called upon to embellish and distinguish, though not in any manner to clothe or conceal, the concrete structure. The presence of these materials may be needed as a saving grace in these early days of design in concrete, to save the designers from a too brutal conception of the forms their material must necessarily take. This is an unfortunate, though marked tendency now, in what should be a refined and restrained domestic architecture, to shape concrete, and its lath and plaster imitations, into the crude, though characteristic, forms of the old mission work. It is needless to say that these forms have no meaning outside of their original environment and would not have existed there but for the exigencies of the case—the crude nature of the materials procurable and the absence of all skilled labor.

But today, with art and science co-operating, it would seem as though architecture were on the verge of an awakening. Commercial architecture with us is beginning to feel the thrill. Abroad monumental architecture as well is showing signs of a renewed joy in life, and structural concrete, both of itself and embellished with richer mate-

rials, furnishes the new and seemingly adequate medium of architectural expression.

President Humphrey officially thanked Mr. Pond for his excellent address, in behalf of the Institute.

P. M. Bruner, of the P. M. Bruner Granetoid Co., St. Louis, Mo., then read a paper entitled, "A New and Simple Method for Securing Dustless Concrete Floors." Mr. Bruner's paper brought about the chief discussion of the afternoon, which was participated in by the more prominent members of the Institute. His paper follows, in part:

The dusty floor that confronts and concerns the concrete worker is one where the fine sand or other aggregate ravel out or rolls out of its bedding under moderate rubbing, scratching, or rolling of wheels. This produces, incidentally, both the objectionable dust and grit. Such continuous failures have naturally created a demand for correctives to be applied after the failure has occurred, or for hardeners to be added to the original composition to assist the cementing potency of the Portland cement sufficiently to avoid the failure.

According to my observations and experiments, I have come to the conclusion that cement top coating on reinforced concrete remains weak and deficient in strength because of the excess of water that is required to make the mortar plastic enough to be properly spread and struck off with a straight edge. This excess of water has no chance of escape downward, and rises toward the surface where it remains until the setting process of the cement has well advanced. When a certain portion of the water has become bound in this way, in the setting process, the mortar stiffens up, and becomes ready for the usual process of finishing and smoothing. Sometimes the setting goes forward too rapidly so that the finishing cannot be carried out without sprinkling some water over the top to enable the workmen to work out a smooth finish. It follows that the floor is finally finished only after a period of four to twelve hours after the composition was first made into a plastic mortar. Not only is the strength of such a floor injured by the excess of water bound and entangled in the pores of the mass, but also by the disturbance of the crystallization process.

The only feasible way to overcome the difficulties, then, seems to be that of withdrawing the excess of water that was necessary for the spreading and the rodding of this plastic mass to the desired level or grade of the finished floor. To bring this about, therefore, I lay on the plastic floor surface, when brought to its proper level, a webbing of some kind, and place over the same some dry material which quickly withdraws the excess of water by the capillary attraction of the dry material. This may take up 20 to 30 per cent of the water originally used in producing plasticity of the mortar. It will not take up more than this, however much dry material is applied, and the amount of water left in the mass corresponds quite well with the amount that a professional cement-tester considers necessary in making proper test-pieces.

My surprise in my first experiment, in regard to the condition of the top-coating after the cloth was lifted off with its load of damp material, was great. It had become so hard or stiff, in twenty minutes after the dry material had been placed over it, that one could walk over the surface without making even a heel mark. In fact the coating was so dry and stiff that it required a powerful effort to float it with a wooden float to an even finish, that could be smoothed off with a trowel. This effort, however, forced the grains of sand so much closer together that in this way some moisture was forced upward from between the more compressed mass, that the floor could be properly smoothed off. The time between the spreading of the mortar and the smoothing of the floor, need not be more than thirty minutes. Without the use of this drying process, we have, as said before, found that it would require the expiration of from four to twelve hours before the work could be successfully brought to this stage.

It is perhaps also well to point out that the top coat placed over reinforced concrete should not be made too heavy. There is considerable difference in the expansion and contraction of the two materials under standard specifications. A medium thickness of top coat will therefore more readily adjust itself to the reinforced concrete beneath. A heavy top coat on the other hand, may assert itself sufficiently to bring about a powerful shearing strain between the two, so that they will separate at the expense of the weaker mass. Specifications should not call for more than a half inch thickness, nor allow more than a maximum of one inch. A top coat of one-half inch thickness on sidewalks, subject to the heaviest traffic, will last more than twenty-five years. The top-coat should also not be made to correct irregularities of the surface on which it is placed. The reinforced concrete contractor can, if he will, obtain a levelness that will require no extravagant thickness of topping. He can also construct this floor so that there will be no laitance on it.

In the discussion which followed, Mr. Johnson stated that Mr. Bruner's paper brought up the question of consistency, because in practically all cement work there is entirely too much water for the good of the concrete. "It occurs to me," he said, "that when the water is abstracted it must call for a shrinkage in the volume." He also asked Mr. Bruner how long these floors had worn.

Mr. Bruner answered that floors had been laid in St. Louis in a building more than two years and that at the elevator, where the greatest wear occurs, there is scarcely any noticeable wearing after this period.

Mr. Chapman wanted to know if there was any special treatment to get the fine material out of the granite, and was advised that the dust of the granite does not stick to the granite itself and that what limestone was used was not wetted.

The question was asked by a delegate if there was any evidence of cracking due to shrinkage.

Mr. Bruner said that there are no evidences of cracking. "If you don't draw the water out," he said, "you will find the concrete full of cracks; and if such a floor has set and you wet it, you will also find it full of cracks; but our stuff, when the water is abstracted, does not show any cracks. It leaves the material exactly where it is."

Guy A. Hardesty asked if the laying of this webbing in any way affected the larger particles of granite, and was answered that the laying of the burlap has no effect whatever. He stated that if the thickness is the same it will lay the same, and that they first laid a strip to walk upon.

Mr. Mensch stated that two years ago he had met a man who had built some concrete steps and who had told him of a new method, viz: to put on the wet surface a sprinkling of cement. He said that they finished up twelve steps in about twenty minutes. He also said that in visiting Italy he witnessed some terrazo steps being built and the workmen put linen around the wooden molds, and on this they placed a rather wet finish consisting of marble and cement, and after five minutes removed the form, the linen thereby taking up the water. He wanted to know what Mr. Bruner does with the burlap after it is used, and was advised that it was a simple matter to rinse it out in the evening in a trough as it comes out perfectly smooth.

President Humphrey then announced that the report of the committee on stucco would be given by Chairman Wasson. Mr. Wasson explained that the specification was for stucco on wooden lath, those on metal lath having been taken care of the year before. Inasmuch as the present specifications were printed in the January number of the journal, he merely called attention to a few paragraphs which had been reconstructed.

In the discussion which followed, Mr. Wig asked if any work had been done which showed a staining of the concrete surface due to lime or other salts coming to the surface.

Mr. Wasson answered that the committee could, but had not, done any work along that line. He added, however, that if the surface is hard there should not be any staining, and that it is simply a question of waterproofing. The report of the committee was accepted for approval by letter ballot.

President Humphrey then announced that he wished to recognize William K. Hatt, of Purdue University, who stated that he would like to suggest that the committee on column tests should publish the complete data on experience and made a motion that publication be had. President Humphrey suggested that the motion be amended to include the publication of the full data and a summary of other tests, also a study of the Poissons ratio. This motion was seconded and carried.

The report of the committee on treatment of concrete surfaces was then read by Chairman L. C. Wasson, who stated that the committee last year had failed to report on the dustless feature of the concrete floor, and referred the convention to paragraphs 13 and 14 of the January journal, as follows:

**Framing**—Studs spaced at not more than 16 inches on centers shall be run from foundation to rafters without any intervening horizontal grain of the wood. These studs shall be tied together just below the floor joists by six-inch boards which will be let into the studs on their inner side, so as to be flush and securely nailed to them. These boards will also act as sills for the floor joists, which in addition will be securely spiked to the side of the studs.

**Sheathing**—Sheathing boards shall be not less than 6 inches or more than 8 inches wide, dressed on one or both sides to a uniform thickness of seven-eighths of an inch. They shall be laid diagonally across the wall studs and fastened with two nails at each stud.

A motion was made and carried to incorporate these paragraphs into the specifications, which will go out to letter ballot.

The next feature of the program was the Topical Discussion on the Dusting of Concrete Floors, which was opened by Mr. Wason. He remarked

that any material will wear somewhat in the course of time and that cement wears away faster than stone. He desired to impress upon the whole industry that it should not use sand at all, even if it is good sand. He advocated a larger material, with coarser particles, and lots of them. He said that he was very much in favor of using a fairly dry mix for laying a surface and, in some cases, it should be tamped. He stated that another way in which the original dust can be removed is, after floating the surface, in place of the first troweling, take a trowel and scrape the surface. He stated that he objected most seriously to a few concerns promoting broadcast poor aggregates. He believed that if good aggregates and fairly good workmanship were employed a good surface would result. He stated that a great deal of trouble is caused by poor aggregates, mostly by bank sand.

C. P. Woodworth, Chicago, Ill., said that in the East there is an epidemic of dusty floors and believed that Mr. Watson's recommendation was the real solution. He stated the difficulty seems to be that the contractors use too much sand and not enough grits. He believed, however, that the human equation entered largely into the matter of laying floors. He wanted to know what is a suitable hardener for such a floor and also said that he would like to have the chairman of the committee state the proper method for keeping a cement floor moist for any length of time after it is laid and whether it can be kept wet enough in the presence of moisture instead of air.

Mr. Watson stated that the best hardener he had ever used is just plain boiled linseed oil and that one or two coats were sufficient. Another method was the use of silicate of soda. He suggested that this be diluted four or five times, apply and let dry, then apply a second coat. He said that if the floor was still found to be absorbent a third coat should be put on.

In regard to the question of moisture, Mr. Wason said that he had found it necessary to put on some such material as sawdust, as it retains the moisture. He believed this should be kept on at least five days.

Mr. Leslie wanted to know if the chairman had had any experience with carborundum.

Mr. Wason said that he had never used it, but thought that it would be an excellent material.

Mr. Wig asked if raw linseed oil would not do just as well as the boiled product.

Mr. Wason said that the objection to raw oil is that it remains greasy for so long a period that it is a nuisance. He also advised that the reason silicate of soda is not so good as the linseed oil is because it is not always so dependable for removing the dust.

A delegate asked if a top coating formed with furnace slag instead of crushed rock would be satisfactory, and cited a case where furnace slag had made floors very hard and smooth. He wanted to obtain some information on the slag question.

President Humphrey said that unless the slag is dense and free from sulphides it is likely to cause trouble. He stated that while slag makes an excellent aggregate, bad slag makes a dangerous one.

Mr. Chapman stated that he had obtained some very satisfactory results by the use of linseed oil and that where the appearance was mottled he had used a small quantity of lampblack. He did not believe that much difficulty arose from the formation of lime on the surface, as had previously been mentioned by one of the delegates.

Mr. Wig said that in connection with his work in the Bureau of Standards he had used resilient paints for several years and had not found them satisfactory. He did not believe that any pigment paint should be used on concrete floors.

Mr. Mensch desired to learn the cost of hardening with linseed oil.

Mr. Wason said that the varying market and the conditions which surround the job largely de-

termine the price and that no general cost could be arrived at. He said that in his experience he had found that a gallon would coat from 75 to 150 square feet.

The meeting was then adjourned until 8:00 P. M.

#### Thursday Evening's Session.

At Thursday evening's session of the American Concrete Institute the special committee appointed to investigate the results of the Edison fire gave a preliminary report on the matter, it being explained that a detailed investigation will be carried out later. It was evident from the report submitted, however, that the findings of the committee were entirely favorable to concrete as a building medium in all cases where the demands upon it are reasonable.

It must be admitted by all factions that no materials are known to the human family today that would have withstood such a fire as that at the Edison plant, where inflammable and explosive products were in great quantity. The committee said that "considering the extraordinary conditions surrounding this fire, the behavior of the concrete buildings was highly satisfactory and constitutes an excellent demonstration of the merits of concrete as a fire-resisting material. It is not surprising that the concrete buildings were damaged, as that any material should have so satisfactorily withstood these unusual conditions."

The committee making the report consisted of Cass Gilbert, Walter Cook, W. H. Ham, Richard L. Humphrey, Rudolph P. Miller, C. L. Norton, J. Knox Taylor and E. J. Moore.

The report is divided into two sections, the first summarizing the findings of the committee and the second part going into minute detail as to the conditions as they were actually found. The text of the first part of the report is as follows:

Your committee appointed to report on the Edison fire, after a careful investigation of the character of the buildings and their contents, the origin and intensity of the fire, and the behavior of the various materials of construction in the fire, have reached the following preliminary findings:

1. No building or any portion thereof can be considered absolutely fireproof. The resistance of buildings and building materials to fire is only relative; no material can resist a fire if it be of sufficient great intensity or duration.
2. The information obtained confirms the general principles already well established concerning protection against the origin and spread of fire.
3. The buildings of this plant were not in accord with present well established practice in that they deviated from this practice in the following particulars:
  - (a) Large undivided floor areas. (Lack of fire walls and stops.)
  - (b) Unprotected exterior openings. (Wooden sash with plain glass, etc.)
  - (c) Absence of proper fire walls, partitions and fire doors.
  - (d) Failure to properly inclose vertical openings, stairway and elevator shafts.
  - (e) Absence of adequate sprinkler equipment.
  - (f) Absence of adequate water supply and fire-fighting apparatus.
  - (g) Failure to either isolate non-fireproof buildings or to protect against them.
  - (h) Failure to isolate hazardous processes of manufacture either by placing such processes in separate buildings or surrounding them by proper fire walls.
4. The fire fully demonstrated the advantages of monolithic structures. The fact that at five different places several of the wall columns were rendered useless and yet the upper portions of the building stood intact, is evidence of the superior merits of concrete in monolithic construction.
5. Considering the extraordinary conditions surrounding this fire, the behavior of the concrete buildings was highly satisfactory and constitutes an excellent demonstration of the merits of concrete as a fire-resisting building material. It is not so surprising that the concrete buildings were damaged, as that any material should have so satisfactorily withstood these unusual conditions.
6. This fire brought out the following important problems, which are considered worthy of further investigation:
  - (a) The strength of the structure after the fire; to be determined by floor load tests.
  - (b) The extent to which the floor system has been strengthened by the method of reconstruction.
  - (c) The strength of the columns after the fire; the strength of the restored columns.
  - (d) The effect of expansion, from temperature changes, on large units.
  - (e) Such other effects of this fire on the structures and structural materials as the conditions may permit.
7. Your committee is of the opinion:
  - (a) That the best type of construction is one which eliminates corners and presents flat or rounded surfaces to the action of the fire. That interior columns of circular or octagonal section offer greater resistance to fire and are less liable to damage than columns of square section, and that the elimination of sharp corners in the floor construction is desirable.
  - (b) That good construction requires a sufficient number of lateral ties or hooping in the columns, and that such construction would offer greater resistance to fire.
  - (c) That in the beam and girder type of construction in order to fully develop T action the slab should be cast at the same time that the beams and girders are poured, and there should be adequate ties between the reinforcement of the beams and girders and that of the slab.

The detailed information upon which the foregoing statements are based is submitted.



A series of investigations and tests are being arranged to develop additional data, which, it is expected, will require some time and which will be presented in a final report as soon as the data can be obtained and collected.

Your committee wishes to express its admiration for the commendable energy displayed by Thomas A. Edison and his associates in the rehabilitation of this plant. Two of the buildings are already occupied, a number of the other structures replaced with temporary buildings, and work is actively in progress for the restoration of the remaining portions of the plant.

#### Friday Morning's Session.

The first paper read at Friday morning's session was that of T. A. Smith, general superintendent, Turner Construction Co., New York City, entitled, "Contractor's Equipment, Austin-Nichols Warehouse," which was illustrated by stereopticon views. Mr. Smith brought out the point of economy in the successful erection of reinforced concrete buildings which, he said, is dependent upon the efficiency with which the materials entering into the construction are handled upon delivery at the building site. He stated that the comparatively small yardage of concrete in any one building operation does not justify an elaborate and costly installation of receiving and mixing machinery. He believed that the installation should be figured on a basis of the cost per cubic yard of the concrete.

Regarding the use of spouts for placing concrete, he said that after the job had been figured out it was found that the cost of the spouting outfits, together with raising the tower and in addition the construction of the guying tower and moving spouts, was found to exceed the cost of doing the job by wheeling the material into place. A platform hoist was constructed to bring the partition tile to the working plant and other special equipment of an economical character made it possible to erect a building at a minimum cost.

The second paper on the program was read by William P. Anderson, president of the Ferro-Concrete Construction Co., Cincinnati, Ohio, entitled "Mechanical Plant for Handling Concrete." Mr. Anderson said that such a plant varies with the character of the work and the position at the site, and that in work of this class the opportunity for extensive labor saving devices is not as great as in work where greater masses of concrete are handled.

He pointed out that there are two classes of equipment which can be used in a mechanical plant for handling concrete, the first being a standard which can be used on nearly every job, the second covering that which can only be used for special purposes, such as unloading devices, industrial track and cars, cableways and other special machinery. For the former he mentioned such equipment as mixers, hoists, charging and placing barrows and similar equipment, and said that every contractor should not hesitate to buy the best in the market as it can be used over and over again and is always a good asset.

He advocated the handling of the aggregate directly from the cars to the mixers without storage. Where this is done, he said, it is well to store some of the aggregate for emergencies, and a convenient arrangement of the plant for this purpose is to build bins along the unloading switch. He said that of course where this arrangement is followed it is nearly always unavoidable to have some demurrage on cars, but that it saves rehandling of material and that in a number of cases this saving is greater than the extra charge incurred in demurrage. He stated that on very large jobs it might be well to build two overhead charging hoppers, one for the sand and one for the stone. In unloading material from cars where the arrangement mentioned is not practicable it is sometimes found advantageous to have a hopper which can be fastened to the side of a car and the material can be shoveled from a car directly into this hopper.

The location of the mixing plant on any job, he believed, is determined by two factors; first, depending upon the ease of getting the materials of which the concrete is composed delivered near the plant; second, the position of the plant relative to

distributing the concrete to all parts of the work, with as little labor as possible. He said that the mechanical mixer is essential on any job of magnitude and that a batch mixer, known as a four-bag mixer, is the most convenient size for general work. He advised the arrangement of the mixing plant in all cases so that the cement and aggregate can be dumped into a charging hopper, which allows a complete charge to be dumped into the mixer at one time.

In the placing of the concrete, he believed that the most convenient form was to chute it from the main hoist to various positions of the work, and in some cases to re-elevate and re-chute where the building covers a good deal of ground. He mentioned another method of handling concrete, which is the use of large derricks and bottom dumping buckets.

"Synthetic Stone in Catskill Aqueduct Buildings" was the title of a paper read by H. Lincoln Rogers, architect, Board of Water Supply, New York, N. Y. He said that synthetic stone as a building material worthy of serious consideration was first brought to his attention about eight years ago, since when considerable investigation had been made. He said that while preliminary investigations were highly favorable to synthetic stone, yet they were not fully conclusive; but it was evident that the use of this material in the Catskill aqueduct buildings offered many opportunities to effect economies and yet indulge in architectural designs that would be extravagant if produced in acceptable natural stone. He believed that synthetic stone could easily shake off its uninteresting monotone and cement shroud, and that all that was necessary to do this is to use stone tints, the admixture of small proportions of mineral colors, hornblende, black marble and similar natural colored aggregates. He said that he had made some experiments and had been successful in eliminating the "made up" appearance and producing variegated, accidental tones in several chosen, warm mellow shades, each developed as a general color scheme, suitable for an entire building or group of buildings.

In his investigations he was then directed to the surface finish and eventually a complete set of specimens were produced which satisfactorily ran the gauntlet of natural stone texture, including some interesting variations made with a sand blast before the stone was very hard.

In arriving at a comparative estimate of cost, based on tentative designs, his estimate showed economies in the use of synthetic stone, he said, ranging from 10 to as high as 35 per cent, varying according to the simplicity or ornateness of the architectural designs.

A set of specifications were prepared, two paragraphs of which are as follows:

All concrete-stone shall be sufficiently reinforced with steel to withstand transportation and erection and prevent cracking from any cause. All lintels and similar members shall be additionally reinforced to carry the load to be borne. Each stone shall be provided with a suitably placed lifting ring or other device for handling it without marring the revealed faces.

Concrete-stone shall be manufactured sufficiently in advance of the requirements of erection to have attained an age of about two months before shipment, unless permission be given to ship sooner on satisfactory evidence that the concrete-stone will not be damaged thereby. Any concrete-stone marred before its acceptance, in building, walls, balustrades or cartouches shall be promptly replaced with satisfactory concrete-stone.

In conclusion he said that synthetic stone has to the architect the salient advantages of honestly expressing its true function as a structural member and the further practical one of being, as well as seeming, fireproof.

Two papers were then read by Alfred D. Flinn, deputy chief engineer, New York Board of Water Supply, New York City, and Harrison S. Taft, contracting engineer, Seattle, Wash., entitled respectively "Concrete Forms for the Catskill Aqueduct," and "The Strength of Concrete Forms." These papers are not at present available but will be published in a subsequent issue.

The meeting then adjourned until 3:00 P. M.

#### Friday Afternoons' Session.

The first order of the afternoon meeting was an illustrated lecture by P. H. Bates, chemist, Bureau of Standards, Pittsburgh, Pa., entitled "Some Further Results Obtained in Investigating the Properties of Portland Cement Having a High Percentage of Magnesia." Mr. Bates stated that his remarks would be a continuation of those made last year in regard to the effect of magnesia upon cement. He said that his investigations simply repeated the conclusions of last year, with some very slight additions. He called attention to the fact that cement with a magnesia content has some dust upon cooling, and said that any cement which is quick setting contains tri-calcium silicate, which will set in the course of about two or three days. The slides projected explained the character and setting properties of cement, and particularly the content of crystals, with an explanation of the same. His remarks proved extremely interesting to all present and considerable discussion resulted.

President Humphrey then announced that before the reading of the next paper he desired to recognize Mr. Tubesing, of the William F. Tubesing Co., Milwaukee, who explained a cost card system for concrete work that reduced the several operations in construction work of any kind to a simple basis, keeping a correct record of the particular kind of work being done by each employee. Each superintendent is required to fill out the cards, and in checking one against the other a complete record of the operations is secured.

Harold P. Brown, New York, N. Y., was then requested to read a paper entitled "Mixing, Curing and Placing Concrete With High Pressure Steam." His remarks were an explanation of the machine which he has invented for blowing the concrete into place, which he has termed the "Atomizer." He said that the crushing strength of concrete blocks could be increased after the final set by treatment for several hours by steam under high pressure. The heat probably causes more or less opening of the pores, he said, and the pressure forces the moisture into the structure and completes the hydration of the cement. In explaining the atomizer, he said that his process consists in thoroughly mixing measured amounts of cement, sand, broken stone and water in a cylinder, which is then filled with hot gas or vapor under high pressure. He claimed that perfect hydration is thus secured and an effective chemical action is set up which gives the product an entirely new quality.

"When the proper pressure and temperature has been reached and the curing process is completed," he said, "the outlet valve is opened and the plastic concrete is dropped into a superheated stream of rapidly moving gas or vapor. The wet particles are separated from each other and can be carried several hundred feet in a rubber-lined hose to the point of deposit, which may be many feet above the mixer. The stream is projected through an expansible nozzle and strikes the work at high speed, thus tamping it and securing unusual density and strength. The blow jars out part of the water, and the high temperature and the sudden reduction of pressure cause rapid evaporation of the remaining moisture, so that quick setting is obtained.

"At first the stones or pebbles bound off, but when a layer of one-half inch or more has been deposited they imbed themselves and further tamp the work, making it adhere strongly to brick, stone, reinforcing steel or old concrete. A thin slab in this way has an almost metallic ring and is waterproof at heavy pressure. When the proper amount of water is used very little concrete falls away, and layers over one foot thick have been placed at one time on vertical walls. More water is used in the final coat, which is thus made plastic enough for easy finishing. During each period of mixing a stream of superheated steam is kept flowing at low pressure through the outlet to keep the hoses and the destination of the new work warm and moist. With careful handling excellent work can be done in freezing weather.

"When steam is used the mixing is done at a pressure of 75 to 80 pounds with sufficient superheat to prevent condensation, thus maintaining the proper amount of water in the concrete. By increasing the amount of superheat to the proper degree, the steam issuing from the nozzle is kept in gaseous form so that the work deposited can easily be seen by the operator. The superheater can be located in the stack of the boiler if the work is nearby, or over a salamander if distant; or when the boiler is operated at 180 to 200 pounds pressure, a reducing valve is placed close to the machine and set for 85 pounds pressure supply to the mixer, thus obtaining the required superheat. While experimenting with the superheater he said that some interesting results were obtained with a lot of rejected cement whose neat briquets were like chalk. Many samples were mixed and the pressure and temperature increased. A point was at last reached when solid concrete was produced.

"A special grade of rubber is used for the hose lining and this is worn but very slightly by the concrete, since wet cement to quite an extent lubricates the surface. I have many feet of hose which is still in good condition after severe service for more than a year, and it shows very little wear. Special couplings are used with no metal parts exposed to the concrete stream. To avoid delay through clogging of the hose, an expandable rubber nozzle is used whose size of opening is controlled by a lever in the hands of the operator. In case a pebble blocks the flow, a slight movement of the lever opens the passage to the full diameter of the hose and the obstruction is blown out. The pressure at the nozzle is about 45 pounds and the stream of mingled vapor and concrete shields the operator from rebounding pebbles, while wooden ferules on the nozzle levers protect his hands from the heat of the steam. A skillful operator can apply a thin, even layer of concrete almost as smooth as the scratch finish on plaster, or he can produce a surface slightly or heavily pebbled as may be desired. A glass finish can be given to the work by projecting it against an oiled sheet of planished metal."

Mr. Bates then read the report of the Committee on Resolutions, as follows:

WHEREAS, The field of activities of the American Concrete Institute has been greatly enlarged during the past year by dues from contributing members, and by donations from individuals and corporations interested in the work, therefore, be it

Resolved, That the American Concrete Institute hereby expresses its thanks to those who have thus generously aided in the work, and that the secretary be directed to send a copy of this resolution with a personal letter to each contributing member, and to each individual firm or corporation from whom donations have been received.

WITNESSES, The standards of the American Concrete Institute include specifications for forms of concrete construction, which, if followed, will improve the state of this art, reduce loss of life and property by fire, and generally improve the standard of building construction in America; be it

Resolved, That these facts and these standard specifications referred to be called to the attention of state and municipal building departments, and the various organizations of fire underwriters in the United States and Canada, with the request that these standards receive recognition in existing laws and in schedules for estimating insurance rates.

Resolved, That the thanks of the American Concrete Institute be hereby extended to the members and others who have added to the success of this convention by the preparation and presentation of papers to the members of the local sectional committees, and to the technical and trade press for co-operation and assistance in furthering the interests of this institute.

Resolved, That the American Concrete Institute expresses its lively appreciation of and hearty thanks for the work of the retiring president, Richard L. Humphrey, who for 10 years has labored with intelligent devotion and untiring efforts in directing the growth of and obtaining support for this organization, and bringing the organization to extended and important public service in its peculiar field of work to establish standards for practice in concrete design and construction.

At the conclusion of the report President Humphrey announced that this completed the work of the eleventh annual convention and closed his duties as president. He expressed his personal appreciation of the co-operation the members had always accorded him and stated that he was in no sense retiring from the institute, pledging his services in its deliberations at future meetings. He warmly congratulated the new president, L. C. Wason, who, he said, had always been an active worker in the cause of the institute and called upon Messrs. Anderson and Moore to escort the new president to the chair.

President Wason was enthusiastically cheered by the members and stated that he would not take up any further time by making an address, and would therefore defer his remarks until the banquet in the evening. He then declared the meeting adjourned.

#### The Banquet.

Better than ever was the great final banquet of the American Concrete Institute last night at the Auditorium. All the notables and all the good fellows were on hand, and it was like a bunch of big school boys having a love feast.

The menu was all that any one could ask, and did credit to the famous old hostelry, which is in itself a synonym for about all there is of cordiality and comfort in Chicago.

Robert F. Hall, of the Universal Portland Cement Co., of Chicago, was chairman of the banquet committee, himself gifted with a good voice and trained as a leader he used his talent with great effect on jolly popular songs between the courses. He had a book of songs especially gotten up for the banquet. Everybody got warmed up and full of friendly feeling right from the start. W. H. Kinney and E. D. Boyer sang an impromptu duet, and did it so well their table had to do it all over again. That song feature was the best ever.

About the time that cheese and coffee and cigars came along, Past President Humphrey arose to introduce the toastmaster, but Robert Hall interfered by calling him out of order, as Percy H. Wilson was on his feet. Mr. Wilson then expressed the appreciation of the society for Richard L. Humphrey and gracefully turned his period into a presentation speech by which a very handsome clock was conveyed to the President of ten years' service.

Vociferous and prolonged applause followed, keeping Mr. Humphrey bowing in response. Then he expressed his thanks of the gift and far more the sentiment which prompted it.

Again Mr. Wilson took the floor and this time claiming sympathy for all secretaries ended a neat little speech by presenting the retiring secretary, Edw. W. Krauss, with another clock of the same kind.

Another round of applause followed, after which Mr. Krauss briefly thanked the members for their good feeling, stating that it would always be his pleasure to help the Institute in every possible way.

President Humphrey then succeeded in introducing the toastmaster, Douglas Malloch, poet, orator and writer of renown. The toastmaster made a beautiful opening, interspersed with his own poems, and used personal filippus that were very amusing. His imaginary telephone conversations had already won the banqueters to his voice and style of speech.

Henry W. Graham followed with Ida M. Tarbell's famous reminiscence of Lincoln, as of Wm. Brown, druggist of Springfield. The recitation was splendidly given in full, and it was fitting to the day being Lincoln's birthday. Upon encore he gave a New England automobile story that was typical and amusing.

Albert Reichmann, L. C. Wason, the newly elected president, and Richard L. Humphrey, the idol of the American Concrete Industry, and others made a few remarks.

It was a great banquet.

#### A MAMMOTH INVESTMENT.

The United States Concrete Products Co., capitalized at \$12,500,000, was granted articles of incorporation at Dover, Delaware. The identity of the financial interests behind the new concern is carefully guarded. The incorporators appearing on the papers are three Wilmington attorneys, Herbert E. Latter, Oscar J. Reichard and W. J. Maloney. The concern is to manufacture concrete, concrete products and to engage in road building.

#### 1916 Cement Show Dates Announced.

The Cement Products Exhibition Co., under whose auspices the Chicago Cement Shows are held, announces that the Ninth Chicago Cement Show will be held in the Coliseum, Feb. 9 to 16, 1916. The Coliseum has been leased this far in advance and notices have been sent to prospective exhibitors because of the large number of early reservations that have heretofore been made for previous shows. The first drawing for spaces, which will be held on the second floor of the Coliseum Annex, 11 a. m. today, will give those who have filed applications an opportunity to attend the drawing in person as well as enable applicants to make such a selection based on actual observations of the booth arrangement as they deem to their best interests. The Coliseum floor will be divided for the Ninth Show in a manner similar to the space division at the present show. All those whose applications are on file at the headquarters of the Cement Products Exhibition Co., 208 South La Salle Street, or at the temporary offices in the Coliseum, by 11 a. m. today, will be allowed to participate in the first drawing.

This early preparation for the Ninth Chicago Cement Show will enable the management to concentrate its energies for the best advantages of the exhibitors. With a full year in which to work, time will be available for advertising the list of exhibitors and the products to be displayed as well as to put into effect comprehensive plans for obtaining a big attendance of the right kind of people.

#### Sends Block From Panama.

In response to a letter written to Colonel George W. Goethals, governor of the Canal Zone, requesting him to ship a section of one of the old French concrete blocks used for many years in protecting the shore line in front of Cristobal from encroachment by the sea, he has sent the piece of block exhibited in Booth No. 8 of the Universal Portland Cement Co., together with a letter describing the construction of the block and some photographs of the present shore line. The cube was cut from one of thousands of three-foot concrete cubes now used to protect the shore in the harbor at Cristobal, Canal Zone, and made by the first French Canal Co., in 1886. Although frequent severe storms have rolled the blocks up from the beach and have rounded many of the corners, the mortar matrix is still intact. Some of the aggregate, not the best type, has been worn out. Together with the piece of concrete are a clipping from the *Canal Record* telling of the sending of the block to the Universal Portland Cement Co. and describing the methods used in making the blocks, a picture of the beach as it now looks, and the letter of transmission signed by Geo. W. Goethals.

#### Lehigh's Spectacular Exhibit.

Spaces 108-111 at the Coliseum was occupied by the Lehigh Portland Cement Co., which had the same exhibit which so pleased the Cement Show visitors last year.

The miniature concrete village was again the spectacular feature of the Cement Show, and there was a crowd constantly admiring the excellent workmanship which has, in such minute detail, reproduced the concrete structures.

Howard Rhode had entire charge of the Lehigh exhibit, with C. G. Reid as his assistant. At the Lehigh exhibit were also to be found the following members of the Lehigh aggregation: A. Y. Gowen, W. E. Viets, Norris Wilcox, L. A. Dauback, M. G. Scott, Harry Eccles, John Donnellan, J. G. Zimmerman, B. L. Swett, C. B. Rogers, S. B. Chittenden, W. A. Fuchs, O. H. D. Rohwer, W. A. Baer, H. C. Abbott, E. Ashton.



# Annual American Concrete Pipe Convention

A substantial number of cement pipe manufacturers of the United States met at the Auditorium hotel on Monday, Feb. 15. In the absence of President B. Blair, of Woodstock, Ont., who was unable to be present, Vice-President J. J. Hammen acted as chairman of the convention.

Chairman Hammen's first act was the appointment of a committee on resolutions, consisting of E. S. Hanson, Chicago; F. G. Lillie, Fremont, Neb., and P. T. Libberton, Chicago; also a committee on nominations, consisting of C. C. Quinn, of Boone, Iowa; J. J. Commons, Chicago, and Wm. Lawson, of Oxford, Ind.

The morning's session was given over to a paper by J. J. Commons, of the Chicago Portland Cement Co., Chicago, entitled "Advertising and Sales Promotion for Pipe and Tile Manufacturers." Mr. Commons explained that the basis of his paper was secured through about 300 letters that he had written to cement pipe manufacturers, and one of the points brought out was that very few manufacturers are making any systematic effort to create a demand for concrete pipe in general, although a few had submitted examples of advertising that were excellent. He also pointed out that his investigations had proved that where manufacturers were doing advertising of good quality their reports of business conditions were quite satisfactory.

There were complaints from a great many, he stated, as to their inability to prepare business-getting advertisements. Some of the concerns had been using small cards and announcements in their local newspapers, but Mr. Commons brought the attention of the delegates to the fallacy of advertising of this class. He stated that good, straight-to-the-point, reason-why copy should be written and the printers should be made to understand that the ads should be properly set. "Whether the manufacturer has the ability to write an advertisement or not," said Mr. Commons, "he at least should be able to advance some reasons for the selection of concrete pipe in preference to other tile, and some reason for the selection of his product in preference to that of a competitor. By giving such information to his newspaper man he could surely get some assistance in preparing advertising." He also said that newspaper copy should be changed often, both as to display and reading matter, and pointed out that the various cement companies were equipped and would undoubtedly be willing to assist in the matter of preparing copy.

The speaker advocated the use of four-page folders, one, two, or even three-color cards and printed price cards. About the latter, he said: "These are good. If you are not ashamed of your prices, quote them openly. Don't imagine that you gain any advantage by keeping your prices concealed. If your competitor wants to know your prices he can easily learn them. Be sure you have the right price and tell the customer, quickly and frankly." He also believed that a keeping-at-it campaign was the only way to secure results.

He suggested that every tile maker secure a copy of Bulletin 19 issued by the Association of American Portland Cement Manufacturers and other bulletins from the U. S. Department of Agriculture and the different state agricultural colleges, for data on preparing advertising copy. He cited a case where a successful Iowa company had during the early period of its existence induced a professor of the agricultural college to visit its plant, test several tile of different sizes and then furnish the concern with a letter showing the results of the test, which was later sent out to every farmer in the territory, followed by other advertising matter.

Another manufacturer in Wisconsin reported success in leaving samples and prices with lumber dealers in neighboring towns, and also in cultivat-

ing the acquaintance of the owners of tile-laying machines. Another concern in Iowa finds its financial standing and guarantee bond of good assistance in securing business, especially on concrete jobs for county ditches. An Indiana tile maker leaves the manufacture of tile to a competent foreman and spends his time meeting prospective purchasers. An Illinois manufacturer attends fairs, both state and county, with samples of his product. Another concern in a small Iowa town, when the contract is to be let, gets the farmers to visit the plant, taking them in autos, and through friendship and salesmanship induces them to recommend their tile to the board of supervisors.

"To sum up," said Mr. Commons, "you should make a strictly high-grade pipe and do as much advertising as you can. Practice the sales methods of successful companies, if you have no plans of your own, and secure the assistance of block and tile machinery manufacturers and the cement companies."

The question was asked if anything had been



B. BLAIR, PRESIDENT, AMERICAN CONCRETE PIPE ASSOCIATION, WOODSTOCK, ONTARIO, CANADA.

done by the members to enlighten the editors of farm papers. Mr. Commons said that in many instances the editors of such papers did not do anything in the interest of cement tile manufacturers and consequently the farmers did not buy such tile.

Secretary Hanson said that some of the papers published considerable matter telling the farmers how to make their own tile.

It was pointed out by one of the delegates that in tests made at Ames and Jefferson the tile had not come up to the specifications of Committee C-6 of the American Society for Testing Materials, and said that one of the best methods of securing business, especially amongst engineers, is to improve the product to meet these requirements.

Another manufacturer said that he made a point out of the fact that the tile layers in his section preferred to use concrete tile because they claimed that it laid straight.

Another point brought out by a delegate was that he indicated to the engineers that the railroads preferred cement tile. He also said it was bad policy to cheapen the price and also to get out to the farmer and make tile on the job. He said that all engineers were familiar with the specifications for cement pipe and suggested that they

also be furnished with specifications for clay pipe, as it seemed that they did not completely understand these.

The chair then called on Richard L. Humphrey, former president of the American Concrete Institute, for an expression. Mr. Humphrey said that the question of selling cement tile depended on three essential elements—personality, quality of product and price. He believed that the most important of the three is the price factor, the next being quality. He pointed out the changes which had been made in the perfection of the cement tile, saying that these had come about by reason of the education of the manufacturer. "On the quality of the cement tile," he said, "there is no question but what you can make today tile or sewer pipe that will meet all requirements. I believe in advertising, but only in the way of boosting your own product." He called attention to the fact that the first tile made were too dry, but there were today a number of wet processes, and that a manufacturer can't help but succeed in producing a good product. He thought the tests that had been made of cement tile were entirely to their credit, and suggested that other tests be made and men interested in the matter be invited to witness such tests. He cited the gains made in the cities of Philadelphia and New York and said that the failure of one product affected the whole industry. He also suggested that the association appoint a committee of three men to represent it before the American Society for Testing Materials.

Chairman Hammen stated that he thought the suggestion a good one, which would undoubtedly be acted upon at the next day's session.

Mr. Collins believed that the most important factor to the industry was the sale of the product. He cited a case in Kansas City where experts from Germany had been brought there to give testimony which was expected to reflect upon the quality of concrete pipe, but on the other hand it was entirely satisfactory to the tile. On motion it was decided that each member of the association will be furnished a copy of this testimony.

Mr. Quinn said that advertising must be followed up by practical demonstrations. He cited a case of a plant in Illinois making small-size tile which was prejudiced against large pipe. He said a machine had been sent down there and tests made, with the result that the concern had been able to secure some profitable contracts.

Mr. Stewart pointed out the mistakes that had been made in the early manufacture, and said that he was now making an excellent product with the same thickness of wall as formerly.

The chair then called upon Mr. Lillie, who stated that the demand in his section seemed to be below what it should be and that he was deeply interested in the subject of creating a market.

Mr. Smith said that the industry needed a series of tests to be given and printed in pamphlet form for general distribution. He suggested that the association appoint a committee to look into the tests of different universities under the supervision of reputable engineers and before the committee, to see that justice was done to the product. The matter was deferred until a later session. The meeting was then adjourned until 2:00 P. M.

## Afternoon Session.

The first paper on the afternoon's program was by W. J. Schlick, drainage engineer, Iowa Experiment Station, on "Reinforced Concrete Tile." The paper was quite technical and Mr. Schlick explained that for those not acquainted with the work of the experiment station he desired to state that it was not in favor of any particular material,

and also in the case of the tests on concrete tile they were not complete because of several factors which entered into the situation. He stated that the results of these tests did not show any consistent relation between the failure of reinforcing and either the cracking or breaking strength of the tile. "Other things being equal," he said, "it would seem probable that the strongest specimen was one at which the greatest strain was transmitted to the steel, or, that the strongest tile would be the one in which failure would be accompanied by the greatest number of breaks in the reinforcing.

He said that measurements taken after the tests showed considerable variation in the spacings of the reinforcing in the different specimens, and that the results of the tests indicated that there is little if any additional strength added by using either No. 10 or No. 11 bridging iron instead of No. 12. He said that the average strengths of the three classes of pipe reinforced with three hoops in which these three sizes of bridging iron were used are so nearly the same as to indicate that the No. 12 wire is as good as the others.

Mr. Humphrey said that he did not believe any committee could do better work than Committee C-6, and believed it the proper thing to adopt the findings of the body, with reference to drain tile, there being no specification on sewer pipe. He stated that the question of reinforcing is an engineering problem, saying that the small tile can be made not reinforced, but that it would be suicide not to reinforce the larger tile.

The paper by J. H. Schmeltzer, Manteno, Ill., on "Cement Tile from the Standpoint of a Drainage Engineer" was read in his absence by Mr. Smith. The paper pointed out where the writer had often been asked to replace small open ditches with tile drains and reinforced concrete was thought to be the practical thing. He cited two instances of work done in Illinois where a large drainage was desired, the work being performed to the satisfaction of all concerned.

The chair then asked Wm. Gillard, of Stratford, Ont., to explain a new machine for making concrete tile which is soon to be placed on the market. Mr. Gillard claimed that the machine is capable of making from two to eight tile up to 12 inches at one time. He said that it followed the plans of other machines and the process consisted of a revolving packer with a screw on the outside of the form, stating that the pipe can be removed from the form immediately. He said that it was possible to make 16-inch tile, but that the 12-inch was all that had been produced so far.

At the request of the chairman, Mr. Humphrey then read the specification of Committee C-6 of the American Society for Testing Materials and it was decided, on motion, that these specifications be adopted by the association.

The day's session then came to a close, the members, however, meeting in the evening for the annual banquet, which was quite an enjoyable affair, at which a round of good stories and wholesome fun were in evidence everywhere.

The second and last day's session of the American Concrete Pipe Association was opened promptly at 10 a. m. Tuesday, a paper entitled "Concrete Sewer Pipe," by Yewis R. Ferguson, assistant secretary of the Association of American Portland Cement Manufacturers, being the first order of the day. Mr. Ferguson cited many instances where the manufacturers of pipe could enlarge their business by producing various concrete commodities. With reference to the manufacture of cement pipe, he said in part:

The reinforced concrete pipe has proved very satisfactory in resisting infiltration. Owing to the imperviousness of the pipe walls and the closeness with which the joints can be made, infiltration can be made negligible, and a sewer may be designed without considering the necessity of taking care of any of the ground water. One often hears that concrete pipe, if suitable for sewers at all, can only be used for storm water sewers. It has been very frequently suggested that the acids from sewage will rapidly disintegrate concrete pipe. I believe this to be very

largely a myth. As far as the action of sulphated hydrogen from ordinary sewage is concerned, it has been claimed that a deteriorating effect occurs above the flow line. The many concrete monolithic sewers which have proven satisfactory after years of use show no deterioration and they refute this claim. As far as the action below the flow line is concerned, this is simply a question of wear caused by friction and the concrete sewer pipe is no different from the concrete monolithic sewer.

"Freight Rates and Shipping," by John L. Zeidler, St. Joseph, Mo., was the next paper on the program. Mr. Zeidler has done considerable shipping of pipe and has consequently been compelled to look very carefully into the matter of freight rates. He brought before the attention of the convention some of the experiences he has had with regard to the question of rates which, we regret, cannot be reproduced because of the lack of space. The substance of his findings, however, are as follows, as related by him:

At our last annual meeting, in an impromptu discussion of freight rates, some of our members were not familiar with the tariff and did not realize that the rate was fully 33 percent higher than that on clay products. (See Western Classifications No. 52 [T. C. C. No. 10], effective November 1, 1910, published by R. C. Fyfe, chairman, in which classification at page 219, item 15, provision is made for reinforced concrete pipe, carloads, minimum weights 36,000 lbs., takes Class "C.") Cement products are less subject to breakage in transit, hence greater economy for the railroad company. This fact has been fully proven to the transportation company by their own records, through their own claim departments, by actual results.

Under the Interstate law you are equally responsible imprisonment in the penitentiary for a term of not exceeding two years, or both, in the discretion of the court. Since 1911 we have been laboring to get a fair adjustment of freight tariffs for cement pipe, and found the railroad company fair when they were made fully acquainted with the facts, with the result that there is now a rate on sewer or culvert pipe or drain tile, reinforced cement or concrete, in packages or loose, carlots, now Class "E," minimum 30,000 pounds. (See Supplement No. 8 to Western Classification No. 52, which became effective September 15, 1914.)

Considering the railroad proposition from our own standpoint, the railroads have made a rate on our product after we demonstrated to them the fairness and justness of our position. If any member feels that our rates are too high, I can furnish him with the information that a reduction can be obtained when we are careful in our loading to ship goods that are well seasoned and not green, and to stow them away in the cars with great care.

Some of our best railroads are spending a great deal of time and study, as well as money, in trying to reduce loss and damage claims. They do this from a financial point of view. As shippers, we have the same reason for commending these roads for the efforts they are making in this direction.

After considerable discussion the meeting was adjourned until the afternoon session.

#### Afternoon Session.

P. W. King, of the Universal Portland Cement Co., gave the first paper of the afternoon, the subject being "Use of Bulk Cement in Concrete Products Plants." Some of the arguments he presented appear below:

Many of the concrete products men would be surprised to know how well they could do without cement in packages. By bulk cement I mean cement that is shipped from the mill to the consumer in box cars and without being bagged in the customary cloth or paper sacks. When a car is to be loaded with bulk cement it is fitted with grain doors and a spout is set in place through one of the car doors. The cement is measured by means of a device called a "weightometer," which weighs the cement as it passes along the belt conveyor to the spout.

Bulk cement is sure to get to its destination in good shape. In the entire history of our bulk cement shipments we have never had a claim for loss or damage of bulk cement while in transit. Several cases have been noted where bulk cement cars with leaky roofs have passed through rain storms, but in these cases the damage was so slight as to be negligible. Underneath the hole in the roof would be formed a small lump of cement about the shape and size of a soup plate. When this was thrown out, the rest of the cement was ready for immediate use. Experience has shown that the unloading of bulk cement raises a minimum amount of dust. There are two well-established methods of unloading bulk cement: first, by means of shovels and wheelbarrows, and second, by means of a power scoop, such as is used in unloading grain. It is possible to unload a large car of bulk cement in less than two hours by means of the power shovel.

A great many people consider that one of the objections to the use of bulk cement is the question of measuring it. There is no reason why bulk cement should not be measured in wheelbarrows in exactly the same way as sand, gravel or stone. In the case of a 1:2:4 mix measured in this way any factor or error that may exist is likely to be constant in the case of all the materials. If greater refinements of measurement are desired, measuring boxes of different types may be used; or, if exact measurements are wanted the materials may be measured by weight.

The shipment of bulk cement results in a measure of economy to the cement manufacturer. It reduces overhead expense and the time of loading. From this it is evident that the cement manufacturer effects a saving which is proportionate to the amount of cement he is able to ship in bulk form. It is therefore reasonable to suppose that the price of cement in bulk may be lowered and at the present time the company which I represent makes a reduction of 2 cents a barrel in the net price of bulk cement. It is possible to save a considerable amount of labor by installing a cement bin in the products factory, from which the cement runs by gravity into a measuring box and then into the hopper of the mixer. Such a bin may be filled by means of a bucket elevator or any other efficient system which will elevate the cement from the car to the bin. When such equipment is installed it is necessary to expend but very little labor in handling bulk

cement from the time the cement is received until it is used in the mix. The method of handling bulk cement after it reaches the factory varies a great deal according to local conditions, but why special equipment is installed the principle of operation is about the same in all cases.

A bucket elevator may be located close to the track so that the cement may be shoveled by hand or by means of a power scoop into the bottom of the elevator leg. It is then elevated and drops into an overhead bin, which should be conveniently located to the mixing plant. If it is impossible to have the bin in close proximity to the mixing plant, it is often found practicable to convey the cement to the mixer or measuring box by means of a spiral or belt conveyor. Unit storage bins are now furnished on the market at reasonable cost. A 50-yard bin consisting of four 12 by 12 posts, paneled sides and steel hopper bottom, may be bought for \$450, or in pairs for about \$600. An elevator of sufficient height suitable for elevating 100 barrels of cement per hour can be bought for about \$275. A power scoop similar to that used in unloading grain from cars, but made somewhat heavier and to operate at a slower speed, will cost about \$100. Thus the equipment necessary for storing 674 barrels of cement, or about three cars, should not exceed \$1,000 and the power for operating is almost a negligible factor.

It is not absolutely necessary to install special equipment in order to handle bulk cement in the products factory. The cement may be wheeled from the car to the storage bin and stored in much the same way as sacked cement. Then if it is used rapidly one man will generally be able to keep the mixer supplied. If only a part of one man's time is available for supplying the mixer with cement, a box may be provided near the mixer to be filled at convenient intervals from which cement may be dipped by a bucket or other means. It is, of course, advantageous to have the cement bin located close to the mixer to reduce labor in handling. One products plant in central Illinois stores the bulk cement upon the second floor. A hopper-shaped box having a spout reaching to the mixer on the ground floor is filled from time to time. The bulk cement is unloaded from the car by wheelbarrows and shovels and wheeled up a runway about 75 feet long to the second floor.

The last paper of the 1915 convention was read by Charles P. Stivers, of Chicago, on "Concrete Pipe for Railroad Culverts." Mr. Stiver's paper was illustrated by stereopticon pictures showing some of the things that several railroads have done with concrete pipe for culvert purposes. Some of his conclusions follow:

The suitability of reinforced concrete pipe for culvert purposes has by now been so effectually demonstrated in both laboratory and service tests, and the use of this pipe has been adopted by so many of the leading railroads of the country, especially of the middle West, that no defense of it as a successful culvert pipe is necessary. From the standpoint of the railroads, the question is resolved largely into a matter of dollars and cents.

Many railroads, however, have continued to maintain wooden bridges and trestles over small waterways because it was thought to be cheaper than to replace them with cast iron pipe and an earth fill. The advent and successful development of the large reinforced concrete pipe changed this condition. On account of the much lower cost of the concrete pipe, it has been found cheaper to place such pipe and fill rather than to replace the wooden trestles in kind. The whole story of the advantages of concrete culvert pipe for railways may be expressed as follows: It provides the required waterway at the least cost and is fully reliable.

A great advantage of the concrete pipe is that the first crack and consequent deformation does not result in destruction. The actual load which the reinforced concrete pipe will take to give the critical load is a great safeguard. Concrete pipe has been laid in all sorts of exposure, soil and weather conditions. In the far West it has been laid in streams whose waters are practically saturated with alkali. In the Northern States it has been exposed to frost and has even been frozen full of ice, but in no case has there been damage due to any of these causes.

The most severe condition, which should never obtain if the pipe is properly laid, is that of a concentrated load on the center of the pipe. If the load is vertical and distributed uniformly over the horizontal projection of the ring the pipe is stressed so that there is tension on the inside of the pipe at the top and bottom and on the outside of the pipe at either side.

If there is also lateral restraint, pressure of the earth on the sides of the pipe, the bending moment due to the vertical load is reduced, and if the vertical and horizontal loads are equal, there is no bending moment, but equal compressure in all parts of the pipe. Under such conditions, the reinforcement should be placed at the inside of the pipe at top and bottom and at the outside near either side. Various methods of accomplishing this have been devised. The first is that of a circular pipe with reinforcement bent into an ellipse slightly flatter than it is high, placing the reinforcement where desired.

Another is to bend the reinforcement into a circle and to make the pipe elliptical in section, its vertical diameter slightly greater than its horizontal. This method has the advantages of allowing simpler bending devices to be used and of obviating the danger that the pipe may be placed with the wrong diameter vertical.

Still another system is that which employs a double ring of reinforcing. This provides for all possible stress conditions, but is not economical of reinforcing metal for the commonly assumed condition of loading.

At the close of this paper, and after considerable discussion, the report of the nominations committee was heard, the following officers being re-elected:

President—B. Blair, Woodstock, Ont.

Vice President—J. J. Hammen, Spencer, Iowa.

Secretary-Treasurer—E. S. Hanson, Chicago, Ill.

On motion it was decided that John L. Zeidler cast the vote formally for the entire convention, which was done with becoming grace.

The last official act of the convention was the appointment of a committee on reorganization, composed of C. M. Wood, engineer, Chicago Portland Cement Co., Chicago; E. S. Hanson, Chicago; John L. Zeidler, St. Joseph, Mo.; J. J. Hammen, Spencer,



Iowa, and P. T. Libberton, Universal Portland Cement Co., Chicago.

A committee on membership is to be appointed by President Blair at a later date.

The convention then came to a close.

#### Attendance.

Richard L. Humphrey, Philadelphia, Pa.  
L. A. Bissonnette, Chicago, Ill.  
H. W. Ruble, Armstrong, Iowa.  
R. W. Young, Paulina Cement Tile Factory, Paulina, Iowa.  
J. G. Beyer, Oak Park, Ill.  
E. S. Haines, Ideal Cement Tile Co., Owatonna, Minn.  
F. M. O'Meara, Chicago, Ill.  
M. J. Schlick, Ames, Iowa.  
David A. Hultgren, C. F. Massey Co., Chicago.  
E. F. Lauber, Wauseon, Ohio.  
O. H. Bigelow, Hawthorne Supply Co., Palmyra, Wis.  
Wm. Gillard, Stratford, Ont.  
F. G. Pulley, Rock Products and Building Materials, Chicago, Ill.  
E. F. Smith, Indianapolis, Ind.  
J. J. Moses, Girard Concrete Co., Girard, Ala.  
E. M. Dressen, Arlington Cement Works, Arlington, Minn.  
E. S. Macgowan, Universal Portland Cement Co., Minneapolis, Minn.  
R. F. Whale, Waupaca Sand and Gravel Co., Waupaca, Wis.  
J. H. Walte, Waukesha Cement Tile Co., Waukesha, Wis.  
T. G. Wilder, Waukesha Cement Tile Co., Waukesha, Wis.  
J. J. Esnunen, Cement Products Co., Spencer, Iowa.  
Harold Smith, Stratford, Ont.  
W. A. Collins, W. A. Collins Co., Kansas City, Mo.  
C. C. Quinn, Quinn Wire and Iron Works, Boone, Iowa.  
F. G. Lillie, Platt Valley Cement Tile Mfg. Co., Fremont, Neb.  
P. H. Atwood, Armstrong Cement Works, Armstrong, Iowa.  
E. S. Hanson, Cement Era, Chicago, Ill.  
Wm. Lawson, Oxford, Iowa.  
J. J. Commons, Chicago Portland Cement Co., Chicago, Ill.  
A. C. Konkrite, Universal Portland Cement Co., Chicago, Ill.  
Warner C. Conn, Chicago Portland Cement Co., Chicago, Ill.  
P. T. Libberton, Universal Portland Cement Co., Chicago, Ill.  
J. S. Stewart Jones, Jones Cement Works, Perry, Iowa.  
C. Durant Jones, Jones Cement Works, Perry, Iowa.  
John L. Zeldler, Pioneer Mfg. Co., Waterloo, Iowa.  
J. H. Stewart, Cement Tile Machinery Co., Waterloo, Iowa.

### Universal's New Sales Manager.

The recent resignation of Edward M. Hagar from the presidency of the Universal Portland Cement Co., and the subsequent selection of "Ben" Affleck to that position carried with it another important change—the elevation of Blaine Smith to the position of sales manager. While Mr. Smith is a young man, his experience with the Universal Portland Cement Co. has demonstrated that he has the necessary qualifications for the important position and predicts the utmost success.

Mr. Smith is popular with the men of the sales department, as well as with all officers and employees of the concern. The admirable qualities of amiableness and patience, as well as the almost paradoxical qualities of determination and firmness have won for him the praise of those who know him and the best wishes of his friends.

In addition to the fame he has won in the cement field, Mr. Smith has become prominent among members of the Chicago Association of Commerce, where he has done considerable promotion work.

#### LEONARDT RE-ELECTED.

Carl Leonardt, of Los Angeles Cal., was re-elected president of the Southwestern Portland Cement Co., El Paso, Texas, at its annual meeting a few days ago. Felix Martinez, of El Paso, was elected a vice president of the big cement company, as were C. C. Merrill, of Los Angeles; C. Boettcher, of Denver, and W. J. Mills, of Las Vegas, N. M. James G. McNary, of El Paso, was elected treasurer, S. C. McCurdy general sales agent and O. J. Binford, secretary and superintendent.

The new board of directors includes Messrs. Leonardt, Martinez, Merrill, Boettcher and Mills; C. A. Fellows and F. H. Powell, of Los Angeles; Robert Krakauer, J. G. McNary and A. Courchesne, all of El Paso. F. H. Powell was elected

to take the place of J. S. Schirm, of Los Angeles, who died during the year.

The annual dinner of the cement company was given at Hotel Paso del Norte. Dinner favors were suggestive of the business in which they were engaged. Thomas A. Christian sang and other entertainers gave musical selections during the dinner.

Those attending the dinner were: C. Leonardt, C. C. Merrill, Frank Powell, T. M. Riordan, A. C. Fellows, O. J. Binford, Robert J. Binford, Max Koffman, J. G. Dean, Edward Held, R. E. Hines, Fred Weckerle, W. J. Mills, A. Courchesne, Thomas Courchesne, Felix Martinez, H. B. Stevens, C. W. Wilcox, V. R. Stiles, S. C. McCurdy, S. C. Awbrey, J. A. Krakauer, Robert Krakauer, Gus Zerk, Kuno Doerr, Claiborne Adams, J. A. Wright, J. D. Badger, Dr. A. Paddleford and A. Wylie.

The company's report showed that during the year the capacity of the El Paso plant had been increased from 1,000 barrels a day to 1,500 barrels, and that the company was now entirely out of debt, paid liberal dividends and increased the working capital.

#### ACQUIRES ANOTHER MILL.

The Cement Securities Co., of Denver, the holding company for a number of cement mills, has bought the controlling interest in the Three Forks Portland Cement Co. and has taken over the management, and the managing office, which has been located at Ogden, Utah, has been moved to the office of the Cement Securities Company in Denver, this change being made at the recent meeting in Denver, where an excellent report was given of the business of the mill in Gallatin county during the past year.

#### HIGHER CEMENT RATES STAND.

Higher rates proposed by the Northern Pacific and Chicago, Milwaukee & St. Paul Railway companies on mixed car loads of cement, lime, stucco, plaster, roofing pitch and salt from St. Paul, Minneapolis, Duluth, Superior, Wisconsin, and other points to points in North Dakota and Montana were approved Jan. 26 by the Interstate Commerce Commission.

Joseph H. Sigman, for the past eight years chief chemist at the Penn-Allen Portland Cement Co.'s plant at Nazareth, Pa., died of Bright's disease in the Nazareth Inn, where he resided. He was forty-one years of age and a native of Dayton, Ohio. He was a member of Porter Lodge, F. & A. M., Catasauqua; Hugh de Payens Commandery, Knights Templar, Easton. He was also a member of the board of prison inspectors of Northampton county.

Fred B. Franks, one of the most popular men in the cement business, was re-elected general manager of the Bath Portland Cement Co. at a recent meeting of the stockholders, which was held in Philadelphia. The old board of directors was again chosen and it was decided to build a new stock house at a cost of about \$100,000 and to make a strong effort to secure South American business, formerly held by Belgium and Germany. The erection of the stock-house will enable the company to proceed with manufacture during dull periods.

Dallas, Texas, Feb. 13.—At the annual meeting of the stockholders of the Southwestern States Portland Cement Co. held here today the name of the company was changed to the Trinity Portland Cement Co. Among the stockholders present at the meeting were C. H. Wagner and M. J. Scanlon, of Minneapolis, Minn.; F. G. Ray, of Vinton, Iowa; M. T. Gunderson, of Kenyon, Iowa; S. L. Wright, of Winona, Minn.; C. B. Ayers, of Chicago, and C. I. Jones, of Lincoln, Neb., besides President H. R. Breck and other local officers and stockholders.

#### CEMENT COMPANY TO BE REORGANIZED.

It is officially announced that one of the largest engineering organizations in the world, J. G. White & Co., Inc., of New York City, has agreed to cooperate in forming a new corporation to take over the Cayuga Lake Cement Co., Ithaca, N. Y., whose plant is located at Portland Point, six miles north on the lake shore.

J. G. White & Co., Inc., representatives, were primarily interested because this is the one Portland cement plant in the state of New York west of the Hudson river which has the advantages of direct connection with the new barge canal, thus enjoying cheap water transportation facilities.

The new company will at once proceed to remodel the plant on the most modern lines, and by balancing the various departments it will be brought to a capacity of 2,000 barrels of cement per day. The old company, anticipating a favorable outcome of these negotiations, has accumulated a large amount of cement by running night and day to care for the demand of its customers during the period of reconstruction.

One of the important parts of the development of the plant will be the construction of a large power plant for furnishing electrical power.

The J. G. White Management Corporation will direct the operations of the new company. The gas company and electric light company of Ithaca are also under the management of this corporation, which directs and controls similar corporations in this country and foreign countries.

The president of the old company is M. E. Calkins, of Ithaca. The stockholders of the old company will retain a minority interest in the new company, but a large amount of new capital will be brought into the company by J. G. White & Co., Inc., and their associates.

J. G. White of New York City, will be the president of the new company, which will be named the Cayuga Cement Co., and the directors, besides Mr. White and William M. Rose of the White company, will be John G. Bergquist, consulting engineer of the Universal Portland Cement Co.; R. W. Kelley, president of the Virginia Portland Cement Co. and R. Walter Leigh, of the banking firm of Maitland, Coppel & Co., of New York City. The directors representing the local minority interests will be M. E. Calkins, Louis P. Smith of the Ithaca Gun Co., and Charles E. Treman.

#### OPENS BRANCH OFFICE.

The Clinchfield Portland Cement Corporation, of Kingsport, Tenn., on Jan. 19 opened a branch office in Charlotte, N. C., on the ninth floor of the Commercial building. The office is in charge of Mr. James A. Hudson. The territory under the supervision of the office will include all of North Carolina and the upper half of South Carolina. Ultimately all of South Carolina.

W. E. Law, sales manager of the Clinchfield company, said that after traveling a number of adjoining states he expects a good business this year. His company was organized five years ago and places 45,000 barrels of cement in Charlotte every year, the street paving contributing largely to this amount. The plant has an output of 2,500 barrels a day and by fall this will have been increased to 4,500. B. F. Withers is local representative. Charlotte has the only branch office the company maintains.

Receiver Guy Mallon, of the Superior Portland Cement Co., Cincinnati, Ohio, has been authorized to accept the compromise which has been tendered in the litigation with the Warren Construction Co. and the Big Four Railway in the superior court at Marion, Ind., where the contention is over the possession of a fund of nearly \$8,000. By the compromise the cement company is to get 40 per cent of the amount.

# Lime Burners of the Nation Meet in Washington

The thirteenth annual meeting of the National Lime Manufacturers' Association was held in Washington, D. C., on Feb. 3 and 4, 1915. Two sessions on Feb. 3, comprising practically the whole day were held at the Willard hotel, while the meetings on Feb. 4 were held in the Lecture room of the United States Bureau of Standards, which is a part of the Electric building of that institution.

President William E. Carson, of Riverton, Va., presided over all the sessions, which were replete with matters of greatest interest to the progressive and energetic lime manufacturers who have created practically all of the lime progress and its dependent information that is now available as a modern development.

Dr. Stratton, director, with Warren E. Emley, the lime specialist of his staff, and Rudolph J. Wig, of the cement branch, assisted by the entire corps of the Bureau of Standards, gave the lime association a hearty welcome, together with such an insight into the workings of the great government institution, which is devoted to the technical promotion of American industries and natural resources, that each and every one felt the instruction and confidence thereby gained was well worth the trip to Washington. Appreciation expressed on every hand of the splendid work of the bureau indicates the progress of our country in bringing about greater results from our natural resources in the future.

On a tour of inspection it was found that the Bureau of Standards has been provided with several fireproof buildings particularly designed for investigation purposes, and each of the many laboratories are supplied with such apparatus as is required for the finest and most complete examination of raw materials together with the processes by which they are manufactured and made marketable. The range of work is very comprehensive, covering as it does the physical and chemical study of rock and earth formations and deposits, as well as the development of these materials into lime, Portland cement, plaster, clay products of every kind, the study of oils, from all of the sources of their derivation, cordage and textile fabrics, ores and finished steel and iron. In fact, every known material and useful product of the soil in the arts and trades is covered and provided for.

The visitors were much interested in liquid air, in the wireless telegraphy laboratory, and were allowed to examine a small bit of the wonderful radium which was about the size of a French pea and worth \$25,000.

The Lecture room is about 90 feet square and provided with ingenious electrical appliances. Even the window shades are provided with raising and lowering devices, so that by throwing out a lever and turning a knob the window shades all come down to the window sill and so darken the room for the use of the stereopticon. The shades are mechanically raised in the same way. The lighting arrangement in the ceiling works in such a way that the audience is unconscious of failing daylight, as the lights increase in intensity in the same ratio as the daylight fades. The scientific gentlemen of the electric department consider these things as the mere application of familiar phenomena in their daily practice.

## Opening Session.

The opening session was called to order by President Carson, and the room was well filled with the delegates, some of whom had arrived the day before. He spoke briefly of the work of the past year, which was more or less familiar to all of the members who have participated in the same to a great extent.

The first subject that came up from the floor was introduced by the Committee on Specifications, Mr. Spackman, the chairman. He reported the progress that had been made by the committee of the American Society for Testing Materials, and these were found to be practically in line with the specifications approved by the lime manufacturers at the last annual convention held in New York.

The subject of the "Standard Barrel" again came up and was discussed by several members. Mr. Pollock, of Kansas City, said that the Western standard barrel contained 200 pounds. Mr. Gager, of Chattanooga, said that the 200-pound-barrel really contained 185 pounds of lime.

Mr. Williams, of Hannibal, Mo., said that he had used 28½-inch staves and 15½-inch heads in his barrels, and he believed that these sizes were used throughout the industry. It was generally agreed that these sizes were the available lime barrel cooperage material as made by the slack cooperage stock manufacturers.

Mr. Spackman suggested that manufacturers should stamp on the head of the barrel the net weight of the lime contained therein, which is always approximately 200 pounds. The variation might be worth the marking of the net weight when lime is sold by the barrel.

Mr. Porter, Hagerstown, Md., said that if the manufacturer sells his lime by weight then he invoices by weight and fills his barrels up to what they will hold regardless of weight.

Mr. Forgy, of Wilmington, Del., said that he considered the definition of a standard package desirable. In the case of hydrate we have already established the 40-pound bag in paper, making five bags to the barrel, and 100 pounds in burlap.

Mr. McNulty, of Mitchell, Ind., moved that the president appoint a committee of three to consider the question and recommend whether we shall adopt a standard barrel, and whether the product shall be sold by the barrel upon its standard size or by the weight of its contents. This was seconded and carried.

W. H. Bradley, of the Duff-Patents Co., Pittsburgh, presented his paper upon the "Duff System of Burning Lime." Mr. Bradley is an expert gas-producer man and has secured very gratifying practical manufacturing results with producer-gas for burning lime. He claims that the best results have been secured where the producer is located 200 feet from the kiln, because it gives a better mixture of the gases. He recommends the use of run-of-mine coal and went carefully into the technique of the proper method of installation and of feeding the producer with coal. The paper was a very interesting one, because of Mr. Bradley's commercial success in the lime business.

Mr. Lauman, of Pittsburgh, being called upon said that he favored the Duff producer as installed by Mr. Bradley and as described in the paper. In his own experience he had found it to be quite satisfactory.

W. C. Kirkpatrick, of Chicago, Ill., read his paper entitled "Fuel Economy and Uniform Production."

Joseph Boero, of Washington, D. C., read his paper entitled "Generalities of Crushing." The speaker is an expert, and dealt with the crushing of hard and soft material comparatively and developed the difference in the requirements and the type of crusher for each kind.

President Carson in commenting upon this paper said that the crushing proposition is one of the most important items that the lime manufacturers have to deal with. He had bought a crusher that guaranteed the production of 12 tons that produced two, and felt that similar experience might be quoted by several others.

Mr. Boero answered all the questions that were put to him in a manner to satisfy the inquirers and prove his mastery of the subject.

John J. Porter, of Hagerstown, Md., next presented his paper on the subject of "Agricultural Lime," and it created quite a sensation because it contained a special argument for the activities of the lime manufacturers in increasing the use of their product in the agricultural field. He stated that the supply of potash for the world comes from Germany, and that the supply is now cut off entirely. As all soils need potash—and, as a matter of fact, no fertilizer proposition is complete without the element—Mr. Porter in his paper went on to explain how a supply of potash can be secured by extracting it from felspathic rocks of which we have an enormous supply. The potash in such rocks, which are commonly known as granite, is in an insoluble condition and a large part of it can be made soluble by the use of lime and in this way the deficiency can be supplied. This is the only suggestion that has ever been developed to point a way out of the situation of the shortage of potash. The speaker stated that it was a proposition for every lime manufacturer to take up individually.

Mr. Gathright, of Richmond, Va., followed with a talk on the subject of the agricultural value of lime. He said that lime was a sweetener and conditioner and as such is paramount in obtaining soil productivity. He said that the purity of the calcium carbonate does not indicate its value for agricultural purposes, but that the value depends entirely upon the solubility in rain water or soil dampness. He showed a diagram in profile of how the soluble calcium carbonate is taken up and syphoned to a stream, which when exposed in a waterfall separated into a mist depositing calcium carbonate 100 per cent pure, which was highly soluble and hence most available for soil use. Pulverized lime reduced to pass through the 80-mesh sieve will dissolve in 20 days. Magnesia is about 10 per cent more efficient, but it neutralizes phosphorus to some extent. Since magnesia is nearly all soluble, the speaker recommends it as filler for commercial fertilizers instead of sand. Referring to oyster shells, the speaker said that these ought to be returned to the oyster beds so that the young oysters can readily get the material with which to make new shells. Laws are already being enacted which will prevent the removal of oyster shells and require them to be put back in the beds. The only path for securing limestone or lime for agricultural purposes is from the limestone quarry.

William Urschel, of Toledo, Ohio, presented his paper entitled "Simplicity of Burning Lime." Mr. Urschel explained how the kilns of his plant at Woodville have been developed, and explained the method of operation in detail. He said that in a year's run their record showed that every pound of slack coal fed to their kilns had produced four pounds of lime. He did not pretend to have a highly technical paper, but certainly presented a practical exposition of good commercial practice for direct firing of slack coal in the production of a very broadly recognized brand of lime.

The paper of Robert S. Edwards, of Portland, Ore., "Hydrated Lime in Oregon State Roads," was read by title.

Mr. Edmonds, of Philadelphia, Pa., presented a paper on the subject of "Economical Operation of Steam Plants and Boilers." He dealt with the boiler installation and feed waters and said that the man who could keep up steam with the least attention to fires is the biggest asset to your power plant. In this he was endorsed by every manufacturer present with much applause.

(Continued on Page 55.)



The meeting then adjourned for one hour to partake of a buffet luncheon which was served in Assembly hall.

#### Afternoon Session, Feb. 3.

George C. Cousins, of New York, gave a paper on rock drills for quarrying purposes, and had on exhibition a tripod drill as an illustration thereof. The paper dealt with the economics of power drills when operated by steam or air.

G. W. Coggeshell, of Washington, D. C., presented a paper entitled "Potash and Lime in Agriculture and the Arts." He mentioned the deposits of granites in New England and in the Southern fields which are largely composed of feldspar—alumina, silica and potash. Potash is insoluble in this combination, but slowly breaks up in rain water, and then the potash is liberated. There is \$15,000,000 worth of potash imported into the United States annually, \$8,000,000 worth of which is the chloride. Mr. Coggeshell and his associates have worked out a practical plan designed to become commercial for the purpose of producing potash for fertilizer purposes, in which he uses a Portland cement outfit of grinding machinery, kilns, etc., to separate the potash from the felspathic rock, using lime as a flux. He said that 75 per cent of the imported fertilizer goes to Virginia, North and South Carolina and Georgia farms, and to supply this deficiency under the present lack of the supply of potash, for which the world has always depended upon Germany, has made it imperative for somebody to work out the problem in this country, and the large supply of granite containing insoluble potash seems to be the path open for such developments. He recommended the oxide and hydrate of lime as being the best forms to use on acid soil, and remarked that some shales contained four per cent or more of potash which, however, has never been seriously considered as a commercial proposition or even experimented with. This paper brought out a great deal of discussion because the preceding papers of Mr. Porter and Mr. Gathright had developed a trend in the same direction, and the lime manufacturers woke up to the fact that it might possibly be found in their providence to supply the country with an indispensable commodity of which a very large volume is used.

Charles Weiler, of Milwaukee, Wis., read a paper entitled "The Day." He said that he had chosen the title because it is the translation of an expression in German, "Der Tag," which has a meaning all its own, denoting at once preparedness and opportunity, together with resolve for a definite purpose. Mr. Weiler's paper will not be reviewed at this time, but in a future issue it will be given in full for our readers. Mr. Weiler has long been considered one of the leaders in thought in the industrial world, and like that wonderful thinker, Horace Greeley, he is a little ahead of his times, although his eloquence, which is greater than Greeley's, may yet succeed in waking up the industrial and commercial thinkers of the country to those progressive and substantial views of co-operation and higher organization which he has been advocating for years. This paper was roundly applauded and doubtless gained adherents or at least placed many in a receptive mood for further suggestions along the same salutary lines.

Louis B. Schramm, of New York City, by invitation next addressed the convention on the subject of "Workmen's Compensation." Mr. Schramm has been a member of the labor commission of the state of New York and related the methods of working out the workmen's compensation act along the lines of life insurance estimations. He advocated the workmen's compensation as a distinct economy in connection with organized business. The paper was very instructive and highly appreciated.

Lawrence Hitchcock, of Cleveland, presented a paper with illustrations entitled "Hydrated Lime

Plaster, and the Fourth Year of Its Development." Referring to a chart, the speaker showed that in 1896 there was 620,000 tons of lime and 150,000 tons of gypsum used in plastering. In 1913 there were 512,000 tons of lime and 1,680,000 tons of gypsum. By the same ratio he estimated that in 1930 the figures would look something like this: 369,000 tons of lime and 18,816,000 tons of gypsum. He said that the result of the work that had been done at their own mixing plant had demonstrated that plasters made of hydrated lime and sand make a better job and are more economical than work done with gypsum plaster. He said that they had experimented with many kinds of mixtures with a view to seeing if there was any improvement to be had by adding some other material other than the lime and the sand, but had found that the hydrate alone when properly mixed with sand would prove to be just the thing that was wanted and plenty cheap enough. He mentioned the case of one of the mixing plants in Ohio that had been induced to mix hydrate with sand according to the formula developed by this company. They had been so highly pleased with the results that they are now regular customers, mixing hydrate

plasters for their market. He called attention to the enormous quantity of lime that is used in plaster mixtures in modern building construction, and cited one case of 120 cars of hydrate that went into one order for scratch and brown coats in one large building job. One of the best talking points for lime plasters is the fact that it is a sound deadener. The old-time excuse of the long time required in handling lime mortar for plaster does not refer to hydrated lime at all, but is a holdover memory with old-time plasterers of the mortar box method of slaking lime, drawing it off and then mixing it with sand which never produced good putty without taking six weeks or more to develop the highest efficiency of the lime. Now, as a matter of fact, Mr. Hitchcock points with pride to the demonstration that hydrated lime plasters finishes quickly as any of the commercial hard wall plasters. For years the lime interests allowed this great market to go away from them on account of their own stagnation. It is now developed and is a big field which can be won over by energetic action in going after it.

(Continued on Page 55.)

## A. & C. Stone & Lime Company

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# With the QUARRIES

## The Macadam Road

By Frank D. Lyon, Secretary, The Interstate Stone Manufacturers' Association.

Over-advertising and misstatements of facts has become quite common by those advocating certain special types of construction. Statements have been made in the public press, and from the rostrum to the effect that certain types of construction are permanent, and the credulous have accepted such statements as being true, when as a matter of fact, no permanent road has ever been or will ever be constructed.

Earth work, certain drainage of an adequate kind may be regarded as permanent. Substantial concrete culverts and bridges may be regarded as permanent; but the use of any surface together with the natural disintegration and decay will produce results far from anything that could be classified as permanent.

In foreign countries and in some of the Eastern States, particular attention is paid to a greater mass in the foundation than has been generally adopted; if it is proven that there is need for the massive foundations it would seem that the use of light foundations should be very critically considered, or in other words more attention should be paid toward providing plans and specifications for a greater depth of stone, and the more general use of the Telford or other foundation of a like character, particularly for main roads on which heavy traffic exists.

The construction of strong foundations will reduce the cost of repair on any road of any type, and it is bad practise to surface the road with any material with an insufficient and a yielding foundation. It is necessary to study local conditions and ascertain the roads on which traffic seeks to concentrate, and such roads should be improved, repaired and maintained in a manner that will provide necessary requirements for the locality.

The construction of roads of the macadam type in country districts is regarded by the oldest and most experienced road builders as being the proper policy to be pursued in the improvement, repair and maintenance of highways in country districts. Roads of the macadam type are best suited to ordinary local requirements; the cost of construction and the cost of maintenance is less, and such a road, systematically and properly maintained, as the nearest approach to a permanent road because such maintenance gives added strength from year to year. The time has not yet arrived and will not arrive for many years to come, when such construction will be cast aside or relegated to the rear as being of no value.

It has been erroneously and calculatively claimed that there are types which are permanent, when, as a matter of fact, no permanent road has ever been or ever will be constructed. In verification of this statement one needs only to inspect the public roads leading into any one of the principal cities where considerable attention has been paid to highway and street improvement. But the parallel should not be drawn as those principals which enter into the question of improving or paving within the limits of cities and suburban districts, cannot and should not apply to the construction of public thoroughfares in country districts.

The point at which it becomes more economical to build a road of the macadam type, by the use of Glutrin or Rocmac, and tar or asphalt, either for a carpet coat or by penetration or mixed method, rather than an ordinary waterbound macadam, is determined by the cost of maintenance on the plain macadam. When owing to severe traffic conditions it begins to cost more to keep plain macadam in good condition, than it would cost to finance a road by the use of Glutrin or Rocmac, or to finance a road constructed either by the mixed or penetration method, by the use of tar or asphalt, then the latter by all means is to be undertaken. In any event, road builders are amply justified in incurring the additional expense of building a tar or an asphaltic macadam road, a glutrin or rocmac road, wherever it is desired to enjoy the advantages of dustlessness and waterproofness.

Old macadam provides an excellent base for mixed tops, and with the use of tar or some of the heavier asphaltic oils now obtainable, a wonderfully good road can be made, by carpet-coating old surfaces which are showing pot holes or raveling under motor traffic. Massachusetts has the best, the most complete and economical system of highway improvement of any State in the Union. The average cost of construction and the average cost of maintenance per mile is much less than that of any other State. The authorities of Massachusetts have been macadamizing their public highways for years and very few miles if any have been constructed of any other type of the macadam type. The policy adopted years ago is the policy which is being pursued today. With the exception of the fact that there has been some change in their cross sections, the roads have been built heavier and stronger and have in numerous cases been surfaced by the use of bituminous materials either by penetration or mixed methods, or by a carpet coat.

The excellent conditions of the roads of Massachusetts can be attributed only to a thorough and practical system of maintenance and their system of maintenance as applied, proves conclusively that a road of the macadam type properly maintained is a stronger and a better road from year to year.

One who is desirous of enlightenment on this subject can devote his time to no better advantage than by a personal and painstaking inspection of the excellent condition of the roads of Massachusetts. A painstaking inspection for comparisons should also be made of the condition of the roads leading into the cities of Rochester and Buffalo, New York; Detroit, Mich.; Cleveland and Toledo, Ohio, and in Porter and Lake counties, Indiana. At and near Rochester, New York; Toledo, Ohio, and in Porter and Lake counties, Indiana, can be found roads of the macadam type, which are proving entirely satisfactory both in the cost of construction and maintenance,

and to the users of these roads. In these localities, unquestionably at and near Toledo and in Porter and Lake counties, Indiana, there are the most miles of improved country highways in the best condition, which cost the least amount of money, and which are in the best state of repair, at the minimum cost of maintenance.

The most satisfactory road of any type under a properly devised system of maintenance, is unquestionably a road of the macadam type, or to put the case more scientifically with reasonable maintenance, the best types of plain water-bound macadam roads; the best types of macadam roads bonded with glutrin or rocmac, or the best roads of the macadam type by the use of asphalt of tar, give the most and best service in proportion to the cost per yard, per year, of their life.

Macadam roads are the roads of France and have been for nearly half a century. The French engineers are today advising the American people to continue to build macadam highways. The average cost of maintenance for the French roads in 1912 was less than \$250 per mile, per year. While this record has been broken in some cases in this country, it must be remembered that the French roads have undoubtedly carried a heavier traffic.

A thoroughgoing, and considerate and honest public official, who is clothed with authority, should select a type of highway improvement suitable to local requirements, soil conditions and traffic needs. At the same time, the earning capacity of the road should be considered, and also the cost of construction, and the interest account on the difference in cost between roads constructed of the more expensive types, and those which can be constructed at the minimum cost.

The question of interest maintenance should not be overlooked. It has been truthfully stated that many miles of macadam highways have been constructed which can and are being maintained, and an added strength given them by proper maintenance, at less than the interest on the difference in cost of construction of the expensive road. It has been found by experience that roads of the macadam type, subjected to ordinary traffic, are withstanding such traffic, and are meeting all requirements necessary for the internal development and improvement of the States and subdivisions thereof.

From 1900 to 1909 the entire system of highways of the State of New York was of the macadam type, and these are the roads of the State today. Subsequent to 1909 for various reasons too numerous to mention, experiments were made, and miles of roads were built, of other types, and after all the experimentation and the useless waste of the people's money, the authorities have come to a realizing sense that macadam roads are the roads to build. The contracts awarded in the State, from Jan. 1 to July 1, 1914, are as follows:

Macadam, 542 miles; brick, 44 miles; concrete, 194 miles. And the large percentage of the brick and concrete roads are within the limits of cities and villages in that State, as the laws of the State of New York provide for the construction of roads within such limits. It would therefore seem that a class of construction suitable to the requirements of cities and villages, and suburban districts, is not regarded as ideal for public highways in country districts.

Those in authority who have had experience recognize the fact that the highest achievement in road building is to provide for the greatest mileage of improved highways at the minimum cost per mile per year. The cheapest road is not cheap unless it lasts and needs only moderate maintenance.

Types of construction which are expensive are not economical or desirable, unless it can be shown that there is no type of road, just as satisfactory, which costs less originally, and both the interest and maintenance cost is warranted for the period of its life.

It is a recognized fact that the township system of highway improvement in New York State is of equally as much benefit and perhaps more to the communities at large, than the construction of the main market and intercounty highways. And the township system in that State provides for the construction of roads of three types, viz.: Macadam, gravel and earth, costing annually as much money for such improvement as for their so-called main market and intercounty highways, there being nearly 70,000 miles of township highways for improvement and maintenance, as compared with about 10,000 miles of the latter class. It is safe to say that nine-tenths of the main market and intercounty highways of the State of New York have been, and are being, constructed of the macadam type.

New Jersey, the pioneer State in highway improvement, is constructing but very few miles of any other than macadam roads, and a like condition exists in Connecticut and Pennsylvania.

Positively there are no types of permanent highway construction. And the public and particularly public officials should recognize this as a fact. They should not be misled by any statements made by individuals or associations who evidently are not in possession of knowledge regarding this question.

Some types of roads, other than macadam, are claimed to be indestructible when as a matter of fact there are hundreds of miles of macadam roads of different types that have given a quarter of a century of service, and yet the advocates of these types of construction have too much sense to describe them as indestructible or permanent.

Another very important feature in favor of the macadam road is the fact that when properly constructed, it is elastic and resilient. This feature is of paramount importance to those communities where the construction of public highways is for the purpose of enabling the farmer and gardener to deliver his products to his local

market by the use of horse-drawn vehicles at the minimum cost.

Construction of roads which are regarded purely as pavements should be avoided in country districts, on account of the damage to horses and mules in hauling products. They are hard, harsh and noisy, and the damage to such live stock in any farming community is far greater than the cost of maintenance of any road of any type.

There are many miles of macadam roads, which have been constructed as single course roads, with a depth of stone of four or five inches, that have been found incapable of maintaining modern traffic.

Plans and specifications are being prepared today for the construction of macadam highways with a depth of stone or thickness of layers in the various courses, of from 6 to 8 inches, and such roads are being built in localities where traffic needs and requirements demand a greater depth or thickness of stone. It would therefore seem wise, in all fairness, that macadam roads be built of such heft or thickness as local traffic requirements demand.

If proper care and attention is given to the construction and maintenance of roads of the macadam type, it unquestionably will be found that they are the most economical both in construction and maintenance,—they are more satisfactory to the users of both motor and horse-drawn vehicles,—they are more pleasing to ride over,—they are more slightly,—from two to four times as many miles can be constructed for the same amount of money,—they can be repaired by the use of local material, and by the employment of local labor.

The French road builder is a thorough believer in the fact that "A stitch in time saves nine." For it is very unusual to pass over any section of a French road where one does not find supplies of material ready for use to be used in maintenance.

The maintenance of French improved roads is by the patrol system, and almost every patrolman has his tool-house where he keeps his tools and supplies, and which is his local headquarters.

The French patrolman keeps the surface of the road clean; cuts and removes noxious weeds, briars, brush and grass from within the bounds of the highway; keeps ditches and culverts open, and pays particular attention to thorough and complete surface drainage.

The French patrolmen are interested in their work; they are conscientious and industrious and in many cases have grown to become old men during the period of employment as patrolmen.

The first macadam roads constructed in France were in the year 1822, and the French engineers at that time, not satisfied with McAdam's method of letting the traffic pack and consolidate the stone, introduced road rollers for such purpose, although road tampers had been used to a considerable extent for the purpose of consolidation.

When motor vehicles came into general use, the requirements both in construction and maintenance seemed to be very materially changed and the motor vehicle in France, as in this country, was regarded by many road builders as the terror of the road. That theory, however, has proved to be somewhat erroneous, excepting where auto trucks with excessively heavy loads were quite generally used, and where high rates of speed were permitted.

The advent of the motor vehicle has naturally produced an army of critics and such critics are becoming more critical day by day. An improved road that was perfectly satisfactory to the ordinary motorist a few years ago, is now severely criticized.

A perfect roadbed with an indestructible surface of any type able to resist all kinds of vehicular traffic has not been discovered.

In France, where there is a concentration of traffic, which is both excessive and destructive, they resorted to the use of stone blocks. Such use applies more particularly to streets within the limits of cities and suburban districts.

The solution of problems entering into both the construction and maintenance of improved roads is becoming more difficult day by day, on account of increased traffic; heavy loads; heavily laden vehicles with narrow iron tires; excessive weights on motor vehicles, and also excessive speed of such vehicles.

The organization of the French highway department deserves careful consideration because of the fact that in France there exists the most splendid system of highways in the world.

So much has been said relative to reorganization of states' departments with a view of permitting local authorities to carry on the work, that it would make the plan adopted in France highly significant, as in France their national system of highways is completely centralized.

Less than 1 per cent of the national highways in France are of the pavement type, other than roads of the macadam type. Less than 3 per cent are bituminous bound or carpet-coated. Over 95 per cent are ordinary macadam roads.

It will be seen that the French system is of a character which is directed from undivided and scientific attention toward the construction and maintenance of water-bound macadam roads. Particular attention is paid to the construction of well-drained foundations and a large per cent of such roads have a base of the Telford type.

There has been such a radical change in the character of traffic upon the main public highways in the last few years that it necessitates a radical change in the plans and specifications for highways improvement.

On main thoroughfares in ordinary country districts water-bound macadam roads must be built heavier and protected with a bituminous top or carpet coating. It is believed that a bituminous top or carpet coating on a water-bound macadam road will prolong the life of the wearing surface to an extent which cannot be estimated, but depending entirely upon systematic and timely maintenance.

Highway authorities both in England, France and Germany are agreed that highway construction in country districts other than of the macadam type is too expensive and is not calculated to meet the requirements.



France to quite an extent has undertaken the construction of macadam roads bound with tar, bituminous or asphaltic materials, and the French authorities seem to be agreed that such construction meets the requirements demanded by the growth of motor traffic.

In Germany for the years 1908-1911 inclusive, bituminous macadam roads were constructed, which in some localities proved to be entirely satisfactory, but in other remote localities it was not regarded as economical because of the fact that the traffic did not seem to demand the extra cost. Therefore construction of that character has decreased during the last two years, and they have returned to the plain water-bound macadam road.

In Greece excellent results have been obtained by the use of slag for macadam surfaces, both water-bound and with bituminous tops. Asphaltic substances have been used successfully with slag. In France, limestone or slag mixed with tar has lasted already for seven years, as against three years without the use of tar.

Probably the best way to measure or estimate the wear of a water-bound macadam road is by the amount of dust produced by the traffic. If on a section of a road the amount of dirt is subtracted from the total amount of sweepings, the balance would represent the amount of dust or wear, provided, however, that the fine dust from the stone had not been blown away.

Light motor vehicles are not now regarded as the abnormal cause for wear, when driven at a reasonable rate of speed. Heavy motor vehicles at a speed of 18 miles an hour or over, grind away the road surface, loosen the stones by the swaying of the vehicle, thus crushing the surface stone.

Ordinary water-bound macadam roads under plans and specifications heretofore adopted are not regarded as suitable for such traffic.

Nearly two hundred million dollars was expended in the United States for highway improvement during the year 1912, of which less than 10 per cent was used for constructing roads of the pavement type, other than macadam.

In England can be found specimens of bituminous macadam roads which are over 30 years old. These roads bear a heavy suburban traffic, which demonstrated the fact that systematic maintenance gives added strength to a road of the macadam type and that such type of road is the nearest approach to a permanent road.

In England the same trouble exists, as in this country, viz.: the inadequacy of funds to promptly meet necessary requirements in maintenance.

Much has been said about the Roman roads, and over 4,000 miles of such roads were constructed in England. Where the ground was marshy, oak piles about four feet in length were driven. Planks were then laid. This, of course, was omitted ordinarily. The usual bottom course or first layer consisted of two courses of wide, flat stones, laid in mortar. The next course was of large broken stone, beaten down with a tamper, which was from seven to ten inches in thickness. The third or top course was of similar stone, likewise beaten down with a rammer and frequently covered with gravel. Upon the base thus formed, stone blocks, some of which were from about six inches in depth or thickness were closely laid. Such a class of construction today is regarded as too expensive and impracticable. Relics of such Roman roads are in existence today. The great factor of the Roman roads is that they were laid in a bed, were not above the level of adjacent lands. They subsequently became covered with dirt, filth and mud. Road building then became a lost art, so to speak, and a system of turnpikes was established in England in the year 1603. Asphalt was first used in London just prior to 1870.

Long-distance or through traffic as compared with local traffic is bound to become more and more important year by year, as the result of the use of motor vehicles. It is therefore a recognized fact that the heavy burden falling upon local taxpayers in respect to maintenance of improved roads will grow with the traffic, which does not originate in the locality, and it naturally follows that excessive charges for maintenance is liable to fall upon certain sparsely settled districts, with low taxable assets. It therefore is necessary that the burden of maintenance should fall upon the State more largely than upon a county or township.

The following questions should be carefully considered: First, are the few to enjoy a saving in expense for transportation facilities to the detriment of a locality? Second, is it fair to the great majority of those who use vehicles, not carrying excessive weights, to have the roads cut up or destroyed and be made to contribute to the heavy damages which naturally follow?

Traffic regulation is necessary, applying to the sizes of wheels; widths of tires; loads to be carried; and legislation must be had to limit and tax extraordinary traffic.

A wheel-tax should be inaugurated and so regulated that destroying factors, such as narrow tires; the use of tractors with lugs on the wheels, when using the highway; excessive loads, etc., be practically prohibited on account of an excessive tax.

In England and Wales there are about 4,000 miles of roads constructed of other than macadam types. About 4,750 miles of macadam bituminous-bound; 16,000 of water-bound macadam, carpet coat; 123,000 miles of ordinary water-bound macadam, and less than 3,000 miles of earth roads.

In Scotland there are about 2,000 miles of roads constructed of other than macadam types; 300 miles of macadam bituminous bound; 22,000 of ordinary water-bound macadam roads, and from records prepared by Engineer J. A. Brody, of Liverpool, it is shown that the total tonnage for an ordinary 16-foot water-bound macadam roadway is about 360,000 tons, chargeable to the life of the surface of the road; of a carpet-coated macadam, 720,000 tons.

Nearly all of the public roads of England are of the macadam type, and almost the entire mileage is water-bound, but when it becomes necessary to reconstruct, such roads are either carpet-coated by the use of bituminous materials or the top course is constructed by the penetration or mixed methods. Generally speaking, the roads of England, France and Germany are under constant repair and are never entirely resurfaced or rebuilt, excepting in cases of extraordinary damages from floods, or like causes, and it is generally conceded that under such system of maintenance, added strength is given to their roads from year to year, and such a road is the nearest approach to a permanent road, of any type yet used.

In Austria the average cost of maintenance is a little over \$300 per mile per annum and in Hungary a little over \$252 per mile per year, and over 6,500 men are employed.

In England and Wales the so-called main roads cost nearly \$400 per mile per annum, while ordinary traffic roads cost a little less than \$115 per mile per annum.

In France the main roads cost less than \$350 per mile per year, while ordinary traffic roads cost less than \$190 per mile per year for maintenance.

In Germany a trifle less than \$400 per mile per year.

In Italy \$275 for national roads and \$185 per mile per year for ordinary travel roads.

The maintenance of French roads is estimated at less than \$250 per mile per year.

There are approximately 2,200,000 public highways in the United States, of which 2,000,000 miles are classed as earth roads.

The best system of maintenance can be attained by the permanent and continuous employment of skilled laborers in charge of particular sections of roads.

#### NEW INCORPORATIONS AND VENTURES.

The Campbell County Cutting, Grinding & Crushing Co., Oak Grove, Ky.; capital, \$1,000; Alfred Eisen and others.

Purcell Bros., Brooklyn, N. Y.; general quarrying and construction; capital, \$5,000; J. O. Rooney, attorney, 320 Broadway.

John Mohr, Waterville, Wash., will erect a rock crushing plant at Waterville.

Western Quarries Co., care Wm. P. McCracken, 209 S. La Salle St., Chicago, Ill.; capital, \$5,000.

Limestone Crusher Co., Ewing, Ky.; capital, \$1,000; Jacob Stickrod, I. N. Ross and F. B. Moore.

The Duluth Crushed Stone Co., Duluth, Minn.; capital, \$75,000; will erect a new plant to cost \$30,000.

Cap Rock Mining & Development Co., Cushing, Okla.; capital, \$50,000; Jack Hye and others.

Interstate Stone Co., care United States Corporation Co., Dover, Del.; capital, \$25,000; to quarry and sell stone of all kinds.

The Oakland Lime & Stone Co., care C. H. Hammond, Oakland, Md.; capital, \$25,000; will erect a lime and crushing plant.

Wabash Stone Co., St. Louis, Mo.; capital, \$2,000; John F. Elliott and others.

Manatee Limestone Co., Manatee, Fla.; capital, \$20,000; R. Kenyon, Manatee, Fla., general manager.

J. L. Harrell, Alexander, Ark., contemplates developing a limestone quarry.

The Paris Business Men's Club of Paris, Tenn., is planning to open an immense limestone quarry. The Suffield-Berlin Trap Rock Co., Hartford, Conn., L. J. Coburn, president, will soon begin the construction of a crushing plant at that point. The concern operates a plant at Berlin.

Attica Limestone & Silica Co., Attica, Ind.; capital stock, \$20,000; to engage in the business of mining and selling limestone, etc.; A. T. Livengood, J. W. Wheikcar, C. L. Irwin.

#### DISCUSS "SAFETY FIRST" IDEAS.

Quarry owners, superintendents and workers from a number of quarries throughout Pennsylvania recently gathered at Harrisburg in order to frame regulations for safety in such operations. Many a man has met with an untimely death or has been injured for life simply due to the fact that some little precaution has been overlooked. It is the leading idea of the men who gathered to look into just such matters and to endeavor to make their respective places of business as safe and sanitary as possible. A plan or code was drafted and submitted to the state industrial board for a hearing.

#### WILL GRIND LIMESTONE.

Bedford, Ind., is to have soon in operation a new industry, to be known as the Indiana Ground Limestone Co., it is reported. A building has been erected near the Southeastern passenger station, the cement foundations have been set and the company have a force of men setting the machinery. The company is headed by Ellsworth King, of Oolitic.

Fire damaged the plant of the Potomac Valley Stone & Lime Co., Hagerstown, Md.

#### Kansas City Crushers.

Kansas City, Mo., Feb. 19.—Things are rather quiet among the rock crushers, as well as in other building materials. But that doesn't mean that things are dead. There is considerable small building going on, and many important pieces of work are in process of starting. The public work alone would make a considerable volume in Kansas City, Mo., and Kansas City, Kan. The large number of street improvements contracts let recently stimulated the rock business, as well as cement.

The Leeds Crushed Rock Co. is furnishing crushed rock for two of the large buildings now in progress—the Glover building at Eighth and Wyandotte, and the Graphic Arts building at Tenth and Wyandotte. The latter takes some 4,000 yards of rock. The Leeds company is also furnishing the rock for a concrete flow line which the Standard Oil Co. is building to bring a plentiful supply of water from the Missouri river to its Sugar creek tank station. George Brindle, of the Leeds company, is hearty and good natured—and he has ample reason to smile this winter, with many contracts to keep the crusher going. W. H. Lynn, who sold cement from the mill of the United States Portland Cement Co. until the bottom dropped out of the market, is now pushing the crushed rock product of the Leeds company. The offices of the cement company and of the crusher company were—and are—together, in the Finance building, Kansas City.

The Spencer Crusher Co., W. F. Carter, manager, has a contract which will take about 1,800 cars of riprap from the quarry for work along the Missouri river, not far from the plant. This is government work for flood protection.

#### PAYS MEN DIVIDEND CHECKS.

The Petoskey Crushed Stone Co., Petoskey, Mich., which a year ago joined the ever increasing number of business men which pay dividends to their employees, recently made out and gave to its employees their profit-sharing checks for 1914. The checks amount, for each person, to that of a full pay day check, and totals about \$1,000. The company officials express satisfaction over the way the plan has worked out this year. The men have put forward their best efforts and are well pleased with the additional money received at the end of the year. Nearly all of the employees have been with the company for from 10 to 12 years.

The Business Men's Club, of Paris, Tenn., has made arrangements whereby a limestone quarry will be established a few miles from Paris. The product is of good quality and the stone will be made into fertilizer which the farmers will get at \$1 per ton f. o. b. at Paris, Tenn. Building stone and road material will also be furnished from the quarry. A good market is expected for the products both in Tennessee and southern Kentucky.

The Tomahawk Crushed Rock & Gravel Co., of Tomahawk, Wis., has been incorporated with a capital stock of \$10,000 by Herman G. Foster, Elmer D. Foster and C. H. Grundy. It is understood that the company will take over the gravel pit of Foster Brothers. A Gallion stone crusher, with a 60-ton bin, an elevator and full equipment has been purchased which will be installed about March 1. The plant will be placed in operation as soon as weather conditions permit.

W. T. Pyne Mill & Supply Co., 1301 West Main street, Louisville, Ky., have taken over the plant of the Peter Melcher Stone Co., and will improve it.

# CLAY PRODUCTS

## Nation's Brick Makers Assemble

The twenty-ninth annual convention of the National Brick Manufacturers' Association was held in Detroit, Mich., beginning on Monday, Feb. 15, and lasting through the week until Friday, the 20th, the final chapter of the sessions being enacted by a visit of the delegates to the brick making district and other industries of Detroit, the former of which is said to rank third in quantity of manufactured product. It is also claimed that the Detroit brick is equal in quality to that produced anywhere in the United States.

Although the clay deposit at Detroit cover only a small area, it is remarkable in that it exists in paying quantities despite the fact that it has been worked for many years, turning out last year over 300,000,000 brick, which was a third more than was produced the year before, thus testifying to the favor with which the material is met in that progressive center. The Detroit brick industry employs about 1,200 men and 200 delivery vehicles of various kinds. It is claimed that the deposit will permit the manufacture of 400,000,000 brick annually for the next 50 years.

The first part of the 1915 convention began with a meeting of the American Ceramic Society, which began its sessions at 10:10 a. m. on Monday morning at the Hotel Tuller, the business sessions lasting three days, and Thursday being given over to visiting many of Detroit's industries.

A. R. Pardington, secretary of the Lincoln Highway Association, addressed the convention and told of the great amount of good roads agitation in the United States, much of which is due to his organization. He spoke of the Dixie highway, the Grant highway and other projected thoroughfares to be connected with the Lincoln highway; of the amount of road improvements, running into the millions, ordered by states, counties and villages along the Lincoln highway, and urged the brick men to go after this business.

When questioned as to whether the Lincoln Highway Association was committed to an exclusive concrete roadway Mr. Pardington said that the association was only demanding permanent roadways and that brick could be employed as well as concrete.

Tuesday night was given over as "good roads night," the addresses being under the auspices of the paving brick men, otherwise being known at the time as "A Night of Good Roads by the Knights of Good Roads." At this session the automobile men were present to emphasize the point that brick roads increase the possibilities of the automobile industry, as automobiles always follow a brick highway. It was reported that more paving brick had been sold in 1914 than in any previous year and that indications pointed to an even greater output in 1915.

The brick men got down to business at 2:00 p. m. on the 17th, and following the customary schedule President Eben Rodgers, of Alton, Ill., stepped out of the chair and the first and second vice presidents, C. P. Mayer, of Bridgeville, Pa., and Charles J. Deckman, of Cleveland, Ohio, were advanced automatically.

Arrivals were particularly heavy during the morning and about 900 of the manufacturers and their wives were registered. Some of the visitors came from points as far away as Seattle and Texas, but the great majority were from Michigan, Ohio, In-

diana, Pennsylvania and other states east of the Mississippi river.

An opening prayer was delivered by Rev. W. E. Sayres, and Park Commissioner Dust briefly welcomed the members of the association to the city. President Eben Rodgers delivered his annual address, in which he emphasized the value of publicity in the building of brick homes and brick roads, and the election occurred as follows:

C. P. Mayer, of Bridgeville, Pa., president; Charles J. Deckman, Cleveland, Ohio, first vice-president; Fitz Salmen, Slidell, La., second vice-president. Theo. A. Randall, who has been secretary of the association for 30 years, was re-elected, as was John W. Sibley, Birmingham, Ala., the treasurer.

While the ladies who were members of the local reception committee entertained the wives of the members at tea in the large ball room, Floyd E. Waite, of the Society for the Advocation of Fire Elimination, Cleveland, talked in the convention hall on "Fire Prevention."

An informal reception and smokerette was held Wednesday evening under the direction of the Detroit committee on entertainment. There were various vaudeville stunts and the ladies were provided with huge black cigars made of chocolate. The musical feature consisted of the appearance of the U. of M. Union Glee Club in "Mellow Melodies," a real hit.

Local committee did their utmost to make the convention a success, both in the matter of valuable information to be given by the speakers and in the entertainment of the visitors. These committees were as follows:

Executive—George H. Clippert, chairman; Charles Bryan, John S. Haggerty, Albert Lonyo, Fred McDonald, John A. Mercier, George Sass, William B. Wreford, secretary.

Entertainment—Charles Bryan, chairman; William Clippert, William L. Holmes, Ralph Spencer, F. B. Stevens, William Thomas.

Finance—John S. Haggerty, chairman; Charles Clippert, Jacob Daniel, Charles Frank, F. B. Holmes, John A. Mercier, Ferdinand Porath, Jr.

Mrs. George H. Clippert was chairman of the ladies' reception committee on which there were 50 members.

The slogan "Don't Talk War—Talk Brick" was adopted Thursday, when a large committee was appointed by the new president, C. P. Mayer, to acquaint the public with the value of brick as a building material, and to boost its use on every occasion. Fritz Salmen, of Slidell, La., backer of the advertising campaign, was elected chairman of the committee. Later an organization was formed. It is proposed, through the publicity men and publications that deal in brick topics, that booklets, circulars and other information shall be scattered everywhere, acquainting all with the merits of fire-baked clay as a means of fire prevention as well as insuring warm and permanent homes.

During the day members of the association heard many papers on topics relating to the brick industry. In the afternoon, wives and daughters of the members participated in a theater party, while those who came for the American Ceramic Society sessions enjoyed an all-day tour of the city's different brick and industrial plants.

On Thursday night the annual banquet was held

with Alex. J. Groesbeck as toastmaster. Judge Alfred J. Murphy was the principal speaker of the evening, his topic being "Conquests of Commerce." Others on the list were: Rev. William S. Sayres, Edgar A. Guest, J. U. Higinbotham, of Chicago; W. D. Gates, of Chicago; Professor Edward F. Orton, Ohio State University. Music was furnished by Harold Jarvis, tenor, and Miss Mary Lyon, piano and reader.

Detroit's industrial importance was emphasized to the delegates on Friday, the last day of the meeting. After a trip to the Michigan Central depot in automobiles, a special train took the visitors to the John S. Haggerty brick plant and other industries along the way. From there they went to the Ford Motor Co.'s plant for a tour of inspection.

Short business sessions were held in the afternoon and evening, at which the last details of the convention were settled.

Determining on the city where the next convention will be held is a matter the executive committee will attend to after the close of the convention. It is understood that Atlantic City will be chosen.

It has been practically decided by the executive board that August or September the brick men will have a summer conference in San Francisco, making their headquarters in a fireproof house built of brick on the exposition grounds.

## Canadian Clayworkers Meet.

The Canadian National Clay Products Association held its thirteenth annual convention at Toronto, Jan. 26-28, at which there were many excellent papers read and much important discussion brought out by the same. The first session was opened by President Charles A. Millar on Tuesday afternoon, Jan. 26. In his opening address he called attention to the financial situation in Canada, the depression of which has been brought on by the European war. He commended those who were in attendance during this period of dull times and said that it pays to get out and mix with your fellow man. He also spoke of the work of the Standardization committee, which has decided on a standard size brick that, he said, would be welcomed by the architects. He urged all the members to stick to the standard brick, despite the inconveniences it would be at first to many of the manufacturers. President Millar advised the delegates of the progress which had been made by the Technical Education committee, stating that in the technical school being built in Toronto everything that is necessary for the equipment of a complete ceramic school is being arranged for and that in the fall a long or short-term course will be provided for that school.

Mayor Church, of Toronto, welcomed the visitors to the city and was responded to by John S. McCannell. D. A. Lochrie also welcomed the clayworkers to Toronto, to which Messrs. W. McCredie, Lyons and George Crain, Beamsville, replied.

The secretary-treasurer's report showed a balance of \$12.03.

The Publicity committee also reported having accomplished some publicity work. In the discussion which followed the opinion was that the association should do more along this line.

The election of the new executive followed, and resulted as follows:

Past-President—Charles A. Millar, Toronto.



President—J. Edward Frid, Hamilton.  
First Vice-President—A. F. Greaves-Walker, Toronto.

Second Vice-President—Thomas Kennedy, Toronto.

Third Vice-President—William Burgess, Todmorden.

Secretary-Treasurer—Gordon Keith, 32 Colborne street, Toronto.

Councillors—D. A. Lochrie, Toronto; C. B. Lewis, Milton; W. McCredie, Lyons; John S. McCannell, Milton, and Angus German, Toronto.

Tuesday evening those attending the convention were entertained by D. A. Lochrie at his theater. In addition to the usual vaudeville and films there were special films showing the value of using clay products, supplied by the American Clay Manufacturing Co., Bucyrus, Ohio.

The first paper of the meeting Wednesday morning was by Andrew Kruson, of the Sun Brick Co., Toronto, on "Cheap Glazes for Use on Ontario Clays and Shales."

Dr. A. C. McKay gave a description of the new Technical School in Toronto.

"Kiln-Kinks" was the subject Wednesday afternoon of a very comprehensive paper by A. F. Greaves-Walker.

W. W. Pearce followed with a talk on "Brick from an Engineer's Viewpoint."

After the discussion on this paper, which called for information on the standard use of clay products, Messrs. Millard Gibson and Gordon Keith were appointed a committee to collect data on standard uses of clay products. They were also asked to get in touch with the architects' association and, if possible, arrange for an address on clay products to be given at their next convention.

William Burgess then gave a paper on "Burning and Kiln Design," after which a discussion on this and Mr. Walker's paper took place, in which much information and kiln practice was given.

This session closed with a paper by P. W. Greene on "Standardization of Clay Products from an Architect's Point of View."

On Wednesday evening the convention was entertained to a theater party at Shea's by the entertainment committee.

J. C. Armer, manager of the Canadian Clay-Worker, gave the opening address Thursday morning on "Concrete Suggestions for Promoting the Use of Clay Products."

The next item was a paper by W. W. Smith, of Shallow Lake, Ont., on "The Making and Burning of Clay Drain Tile."

Geo. P. Fisher, ceramic engineer with the Dominion Sewer Pipe Co., Aldershot, followed with a paper on "Underdrainage."

The discussion was opened by Prof. W. H. Day, Guelph.

W. McCredie then reported for the Tile Publicity committee, pointing out that in view of the war conditions the city manufacturers would be compelled to reach out to the farmer for business.

A. L. McCredie followed, urging the clay products manufacturers to advertise and to carry on a campaign among the farmers who were getting high prices for their products.

The first paper at the afternoon session, Thursday, was by Gordon Keith, on "Plant and Product of the Government Brick and Tile Co., Mimico, Ont."

He was followed by E. W. Knapp, of Sun Brick Co., on the "Possibility of Manufacturing High Grade Paving Blocks in Ontario."

The last paper of the convention was by John S. McCannell, president of the Milton Pressed Brick Co., on "Steam Shovels for Handling Clay and Shale."

In enthusiasm and numbers the banquet surpassed any social function ever held by the C. N. C. P. A. The presence of the ladies added greatly to the gay effect and the music by the Bodley Orchestra greatly enlivened the gathering.

## Illinois Clay Meeting.

The thirty-seventh annual meeting of the Illinois Clay Manufacturers' Association was held in Springfield, Ill., Feb. 8-10, at the Leland hotel. J. L. Buckley, of Aledo, Ill., succeeded D. C. Haeger as president, the only other change being the election of Douglas Stevens, of Cayuga, Ind., to the vice-presidency. The annual dues were raised from \$3.00 to \$5.00.

The state fire marshal, Walter H. Bennett, read a paper describing the great economic waste, due to fires, being followed by Warren Ittner, of Belleville, on creating a demand for clay products. J. F. Jones, of St. Louis, then read a paper pointing out the advantages and disadvantages of central station electricity. J. E. Randall, of Indianapolis, read a paper on the subject of "Build With Brick." A complimentary theater party in the evening given by the Springfield brickmakers ended the proceedings of the first day.

J. L. Buckley's paper on cost accounting was the principal address of the Tuesday morning session. An address by B. H. Richards, of Edwardsville, on what the net gain in clay manufacture was the next feature on the program. This was followed by a talk on efficiency by Fred C. Schwedtman, of Springfield. Douglas Stevens contributed a valuable paper on keeping down costs.

A paper on reciprocal insurance by P. B. Eckel, of St. Louis, was the first item of the afternoon program. Mr. Eckel was followed by Adrian F. Sherman, who spoke of the workmen's compensation law and its effect upon Illinois clayworkers. J. W. Robb, of Clinton, Ind., spoke on the electrification of a clay product, and was followed by Eben Rodgers, of Alton, Ill., ex-president of the National Brick Manufacturers' Association, who had for his subject the problems of the men who make brick and hollow ware. The banquet in the evening was presided over by Dr. A. L. Converse.

The closing day was begun by a paper by A. E. Williams, of Urbana, who recited the results of his experiments to overcome efflorescence. Frederic W. Donahoe, of Chicago, then gave his paper, illustrated with lantern slides, entitled "Reaching the Farmer." The subject of organizing a promotion bureau among clayworkers whose products entered into farm buildings and farm drainage, was discussed. This was followed by a moving picture exhibition, conducted by C. S. Holloway, of Chicago, who showed the films that are used by the National Fire Proofing Co. in its campaign among architects, illustrating the uses of hollow tile.

R. T. Stull, professor of ceramics at the University of Illinois, followed with a discussion of the neglected opportunities of clayworkers, and later, A. P. Grout, of Winchester, spoke of silos—their uses and construction, and demonstrated that the clay silo was the "one best bet" of the farmer who wanted to make his farm building productive. A. E. Williams then spoke of the manufacture of silo block.

The election of officers and the reports of committees followed, and the convention adjourned, to participate in an inspection trip to the plant of the Springfield Paving Brick Co., which is one of the "show" plants of the state. From here the delegates returned to their various homes.

## No Shortage in Brick.

New York, Feb. 19.—Daily newspaper reports have intimated that there is liable to be a shortage of common brick in this market, upon the opening of the 1915 building season in March. Regarding this statement William K. Hammond, dean of the North river common brick manufacturers, said:

"There is absolutely no chance for a shortage of common brick now or in the immediate future. Under the circumstances it is not within the pale of reason to even imagine that the Hudson river

brick manufacturers would overproduce. The fact that they made only 750,000,000 brick last year is no indication that there is going to be a shortage. The full quota, of something like 1,200,000,000 brick, is in the sheds up the river, largely made up of some 400,000,000 brick that was left over from last year.

"It is also preposterous to imagine a jump in the price of brick beyond a strictly normal level. The market here does not warrant any such anticipations. Dealers are all well supplied and for that reason it is not necessary to carry a large stock in reserve under cover at the wholesale docks.

"When the cry is started that brick is to be short many builders are prone to use other materials which hurts the brick business. I know of one case in particular where there was a diversion of some 8,000,000 brick in favor of concrete simply because newspapers, without authority, started the rumor that brick were going to be scarce and prices were going to move up. The greatest service that could be done to Eastern builders is to assure them officially that there is ample brick and that prices will not move to unseemly levels.

"Brick makers are just as anxious to encourage building operations by keeping their prices within an encouraging tone as the steel, cement or other lines. The prospects are, therefore, that builders will find as much brick on hand as they can use at prices that will be well within their estimates, because they are below normal for this time of the year and doubtless will remain in that position for some time."

## Brick Plants Resuming Operation.

Louisville, Ky., Feb. 19.—Brick plants in Jefferson county are resuming operations after a short period of inactivity. The plants generally close the latter part of December and remain closed for about a month in order to complete repairs and also on account of bad weather, which retards clay working. Considerable quantities of common and face brick are on hand in some of the yards, while others are behind and have orders enough to keep them busy for 90 days.

The Southern Brick & Tile Co. is finding business comparatively quiet just now, as far as local deliveries are concerned, but is handling a few shipments. Special attention is being given to drain tile for agricultural purposes at the present time.

J. H. Bell, of the Louisville Fire Brick Co., said that fire brick has not been in especially strong demand during the past few weeks and that the plants at Louisville and Grahn, Carter county, Ky., were only working about half time. Smelters, railroads and other big users of fire brick are curtailing expenses as much as possible just now. Fire brick used in residences will hardly figure more than one per cent of the total output of the plant.

The P. Bannon Pipe Co. was recently awarded a contract by the Congleton Lumber Co., of Lexington, Ky., to furnish hollow tile on a \$40,000 residence which is to be erected shortly. The company also was awarded a contract recently through Ward & Glossop's office to furnish a quantity of 5x8x12 hollow tile which is to be used in the new Terstegge residence in Cherokee park. The fireproofing will be covered with stucco. This is the first time the company has furnished this size tile for residence work. However, it lays up quickly and is well liked by contractors.

The Johnson-Porter Co., of Paris, Tenn., is developing new clay pits in Carroll county, near McKenzie, Tenn., and shipping clay to Ohio and other points. They have for some time had large pits in Henry county. At the new pits, a branch line of railway has been constructed by the Nashville, Chattanooga & St. Louis Railroad, from a point near Hico.

# SAND and GRAVEL

## Surplus Storage for Gravel Plants

The bins of the average gravel plant have a capacity of one day's run. The plant is then required to sell all sizes all the time and is, consequently, not prepared to get the top of the market prices for all sizes. For instance, here is a plant that gets an order for 50 cars of sand. To produce the sand it must produce the other sizes of stone. If it produces the other sizes of stone, it has to sell them, and when forced to sell it is often at 5 cents below the market. To meet this condition many of the producers have been reasoning thus: Let us pile up the sizes we can't sell to advantage, save them for winter when no plants are running, and we may then be able to get 5 cents above market. We'll also get another advantage—we'll keep the plant running full capacity right along through the season, keep on a complete organization and, consequently, produce at the least possible expense. In other words, our sales and our production can be made independent of each other, one getting the top of the market and the other getting all the advantages of continuous operation.

In the light of this reasoning more and more

by 102 feet, carried in the main gallery, which is 200 feet long. This latter conveyor is movable and reversible and can be placed so as to deliver to any point of the 200-foot pile.



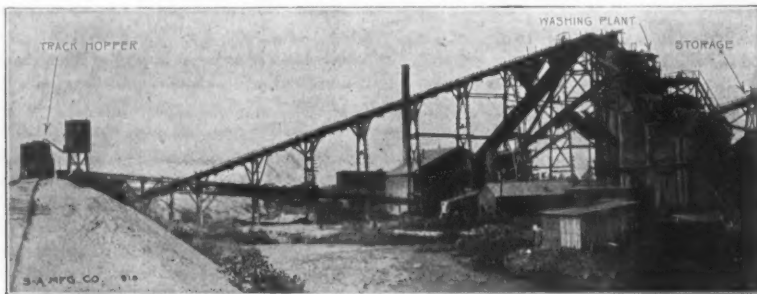
THIS PLANT PRODUCES 3,000 YARDS PER DAY—OUTSIDE STORAGE CAPACITY IS 25,000 YARDS.

At their Plainfield plant this same company uses a much simpler outfit, consisting of a single belt conveyor leading off from one of the bins and piling in a conical pile. The storage capacity is

tional ground storage. Of course, with elevated bins, all reclaiming is done by gravity, but the expense of the bins is too great for seasonal storage.

The Stephens-Adamson Mfg. Co. has made a special study of modern storage systems and has designed and manufactured many storage systems

in connection with its gravel washing plants. It maintains an engineering department which is prepared to study individual conditions and to recommend the storage arrangements best adapted to the conditions.



PLAINFIELD PLANT—CHICAGO GRAVEL CO.

producers are making provision for surplus storage. The mechanical arrangements for handling the surplus material usually comprise some arrangement of belt conveyors. A locomotive crane may be pressed into service for storage purposes, but this is done usually only as an emergency measure. Gravel men are quite uniform in their belief that the belt conveyor, as a permanent piece of storage equipment, is most economical. The locomotive crane has a more legitimate field in reclaiming from storage, but its use here depends more upon the local conditions. Permanent preparations for surplus storage very consistently use a belt conveyor in a tunnel beneath the pile. The cost of the tunnel, however, makes this an arrangement more expensive in first cost though cheaper to operate.

The photographs accompanying this article show two different arrangements employed by the Chicago Gravel Co. in two of their plants. At the Rockdale plant the production capacity is 3,000 yards per day and the storage equipment is, consequently, quite extensive. The essential element in this storage system is seen in the cut to be a steel structure carrying a distributing conveyor. A 24-inch by 105-foot "S-A" belt conveyor, which leads out from the bins, is arranged to receive from either one of the two steel tanks carrying the coarse and fine gravel. This conveyor delivers onto a shuttle type "S-A" belt conveyor 24 inches

thus provided with the simplest possible piece of equipment.

Other storage arrangements which are being utilized are largely variations of the two systems described. Many plants employ a duplicate arrangement of the system last described, using two conveyors storing from two bins. Some companies use a tripper line; others erect additional elevated bins served by a tripper line, and in this case usually extend the tripper line to provide addi-

## SEEKS SAND-GRAVEL WEIGHT STANDARD.

The Contractors' and Dealers' Exchange of New Orleans, La., wants a standard for sand, gravel and mixed gravel—not a standard in size, shape or number of grains to the cubic inch, but a standard in weights. The exchange hopes to determine a standard for the future guidance of all. The standard will fix a weight per cubic yard on sand, gravel, and mixed sand and gravel, and the car-load weight on same materials.

The Crystal Lake Gravel Co., of Plymouth, Wis., has made several improvements on its property, including the drilling of a well and the installation of new equipment.

The Waupaca Sand & Gravel Co., of Waupaca, Wis., has increased its capital stock from \$15,000 to \$25,000 and contemplates the erection and equipment of a large plant for the manufacture of cement products, specializing in sewer pipe and drain tiling.



A SINGLE BELT CONVEYOR PROVIDES STORAGE CAPACITY OF 3,000 YARDS.



## An Interesting Sand Exhibit

The Kansas City Sand Co., Kansas City, Mo., had one of the most attractive exhibits at the lumbermen's convention held in Convention hall recently. A working model of the company's large plant on the Kaw river featured their exhibit at the show. This model of the plant shows the exact process by which the sand is pumped, elevated, screened, washed and loaded into the cars. It was one of the most popular exhibits in the hall and had to be kept working all during the convention. Large photographs of the big building in Kansas City, for which the company furnished the sand, was also part of their exhibit. Match scratchers in the shape of a washboard plastered with washed Kaw river sand were given away as souvenirs by the company. The demand for washed sand has increased so rapidly that the company, in addition to the two plants now in operation, has found it necessary to increase its capacity and is now installing an additional plant which will be in operation in time to take care of the spring trade. The new plant will be on the Rock Island railroad. The other two are on the Kansas City Terminal and Kansas City Southern Railway.

The Kansas City Sand Co. has attained what is today the maximum efficiency in the delivery and hauling of sand. Deliveries are made on short notice, if necessary, in quicker time than sand can be loaded into a wagon with shovels. The company has two five-ton motor trucks in service. These are of the dump body type, made by the Pierce-Arrow factories. The greatest saving of time, however, is affected by the use of a Browning crane loader, which moves the sand directly from railroad cars into the trucks.

The loader is mounted on a specially built track parallel to the railway switch, and may be moved along a line of cars. A space of about 12 feet between the loader and the cars allows room for the trucks to drive between. The sand is handled in a half-ton clam shell bucket, and shoveling is only necessary in the bottom of the cars, and then only to heap the sand into piles that the bucket can reach. Two minutes is the average time required for loading.

Charles Meierhoffer, of the Kansas City Sand Co., has no record to show how much saving is effected by the system, but he declares the quick loading method is worth considerable to his company, since it enables them to obtain rush orders which could not be handled otherwise. He finds it of great value also in handling the materials on big jobs where constant deliveries of large amounts of supplies are needed.

## LIME MEETING.

(Continued from page 48.)

This paper created great excitement, for practically every manufacturer present was a producer of hydrate, and each man felt that here was where he was going to get some practical benefit out of the discussion. Several were of the opinion that the admixture of some other substance was essential, in spite of Mr. Hitchcock's assurance that he had succeeded so well with nothing else but his Tiger hydrate and sand.

Henry S. Spaekman, Philadelphia, Pa., spoke in an authoritative way about the use of Portland cement, gypsum and alca as the additional substances, considering each with its particular value, and showing how the alca, with which he had had a great deal to do in producing for this very purpose, seemed to be the ideal substance where additional material was proved to be essential, and stated that in many cases it was necessary to have additional material present to develop plasticity particularly.

The next paper was that of J. Boero, Washington, D. C., on the subject of "Hydraulic Limes in America." Mr. Boero is a French chemist and engineer who has a great many technical achievements to his credit in his native country. He recited the formula of La Farge cement which, he said, was nothing more than a very high grade of hydraulic lime produced in France that might find a counterpart in this country if the matter were pursued properly. La Farge cement consists of 60 per cent lime, 21 per cent silicate, the balance being made up of clay and impurities. The speaker was very much of the opinion that a great vista was open to the lime manufacturers in the particular direction of hydraulic lime, because there are very many practical uses for the material where no substitute has ever been found available. The coat of La Farge cement, of which a very large quantity is sold in this country, was recited in proof of this statement.

After announcing that the sessions on the morrow would be held at the Bureau of Standards, the meeting adjourned for the day.

### Morning Session, Feb. 4.

The delegates assembled at the Bureau of Standards promptly at 10 o'clock and President Carson called the meeting to order.

F. E. Kissinger, of New York, presented a paper entitled "The Paper Bag versus Cotton and Burlap." Mr. Kissinger is a lawyer by education and a speaker by the gift of God. He thoroughly discussed the paper bag and the package proposition from every possible standpoint, and exhorted the lime burners to stick to the standard paper bag.

R. E. Scott, of Philadelphia, presented an illustrated paper entitled "Electricity About the Lime Plant." He showed a large number of machines and appliances that have been found useful and economical for the work for which they were recommended.

Richard K. Meade, of Baltimore, Md., presented an illustrated paper entitled the "Modern Hydrating Plant." This paper, which will be published in full in a later number, was very interesting, showing in detail a plant of recent construction in New York state.

August Lauman, Jr., of Pittsburgh, Pa., showed a number of pictures illustrative of the great plant of the National Mortar & Supply Co., at Gibsonburg, Ohio. Mr. Lauman's explanations were comprehensive and lucid. The pictures were so well chosen that the experienced lime men present were edified and delighted with the brief, little impromptu lecture, in which the speaker showed himself a master of the subject and at the same time a young man confident in the mechanical correctness of the plant which has demonstrated successfully.

Warren E. Emley, specialist in lime investigations for the Bureau of Standards, presented four topics, explanatory of the development of methods for testing which the bureau has been working out during the past year. These related to methods of ascertaining whether or not a lime will pop, for measuring the rate of set in a lime mortar, for measuring the consistency of a lime mortar and measuring the plasticity of lime putties.

At this point the management of the bureau announced that luncheon had been prepared and the meeting consequently adjourned for luncheon and for the tour of inspection of the extensive plant of the bureau, which has already been mentioned.

It was getting late when the meeting resumed, and on motion of Mr. Gager, of Chattanooga, a committee of three was ordered to standardize the size of the lime barrel, containing one member from the East, one from the South and one from the West.

Charles Warner, Wilmington, Del., recommended that a fund be raised by special subscription of \$1,200 to be used by the lime service bureau along traffic and business lines. This recommendation was supported by Mr. McCoy, Strausburg, Va., who later accepted Mr. Warner's substitute to refer the matter to the Executive committee for later action, as the hour was getting late.

A rising vote of thanks was accorded to Dr. Stratton and his staff of the Bureau of Standards for the hospitality and co-operation shown to the organization and its members on this and many other occasions in the past.

Bernard L. McNulty, of Mitchell, Ind., secretary of the committee in charge of the Hydrating Bureau, announced that the committee had organized and had raised a sufficient sum of money by subscription amongst the leading hydrate producers of the country to conduct an advertising and instruction campaign upon a very broad scale. An office has been established at Pittsburgh in the Oliver building, with Norman Hough in charge, and with L. M. Whitcroft as chief engineer. Under this organization work will at once proceed in the preliminaries for the campaign, which will be launched early in the present season.

Mr. Hitchcock followed with a strong talk supporting the efforts of the hydrating bureau and claiming the hearty support of the subscribers to the same to make it a great success.

Colonel Cobb, of St. Louis, made some strong recommendations in support of the bureau, and Mr. Hough, the manager, was introduced to make a few remarks to those who were interested in this energetic part of the practical work of the association. Several papers were read by title which will appear later or be issued in pamphlet form if found to be advisable.



KANSAS CITY SAND CO.'S EXHIBIT AT RECENT LUMBERMEN'S CONVENTION AT CONVENTION HALL, KANSAS CITY, MO.

The nominating committee reported the following nominations, which were unanimously elected: William E. Carson, Riverton, Va., president.

Martin Deeley, Lee, Mass., first vice president.  
J. F. Pollock, Kansas City, Mo., second vice president.

A. H. Lauman, Pittsburgh, Pa., third vice president.

Fred K. Irvine, Chicago, Ill., secretary.

C. W. S. Cobb, St. Louis, Mo., treasurer.

Executive Committee: William E. Carson, ex-officio, Riverton, Va.; Charles Warner, Wilmington, Del.; Lawrence Hitchcock, Cleveland, Ohio; Bernard L. McNulty, Mitchell, Ind.

The meeting then adjourned sine die amidst great applause, and so the thirteenth annual meeting goes to history as the most practical and for that reason the most important session that the lime manufacturers' association has yet held.

#### The Registered Attendance.

G. Gilbert, Smithsonian Institute, Washington, D. C.  
T. Cousins, Ingersoll-Rand Co., New York, N. Y.  
H. Dole, Improved Equipment Co., New York, N. Y.  
P. Ferguson, Blairmont, Va.  
A. H. Lauman, National Mortar & Supply Co., Pittsburgh, Pa.  
L. C. Bonnot, Bonnot Co., Canton, O.  
E. E. Herr, Limeton Lime Co., Inc., Limeton, Va.  
S. A. Thompson, H. Miscampbell, Duluth, Minn.  
J. L. Borden, B. F. Borden & Co., Riverton, Va.  
W. L. Helsey, High C Lime Co., Rheims, Pa.  
Charles A. Cox, The Cox Lime & Stone Co., Montgomery County, Pa.  
Charles C. Cox, The Cox Lime & Stone Co., Plymouth Meeting, Montgomery County, Pa.  
Henry M. Camp, Lime Service Bureau, Washington, D. C.  
L. M. Latta, O. C. Barber Fertilizer Co., Barber, Va.  
J. King McLanahan, Jr., American Lime & Stone Co., Blair Limestone Co., Hollidaysburg, Pa.  
Howard L. Clark, Manufactures Record, Baltimore, Md.  
G. J. Nicholson, White Marble Lime Co., Manistique, Mich.  
Irving Warner, Charles Warner Co., Arlington, Del.  
H. A. Gawthorpe, Merion Lime & Stone Co., Norristown, Pa.  
H. J. Taggart, The A & C Lime Co., Canton, O.  
R. S. Wright, Shenandoah Lime Co., Strasburg Junction, Va.  
John J. Porter, Security Cement & Lime Co., Hagerstown, Md.  
Ambrose Tomkins, Tomkins Bros., Newark, N. J.  
C. W. S. Cobb, Glencoe Lime & Cement Co., St. Louis, Mo.  
Phil. Daurenheim, Glencoe Lime & Cement Co., St. Louis, Mo.  
E. J. Helmerding, J. B. Speed & Co., Louisville, Ky.  
F. J. Kemp, J. B. Speed & Co., Louisville, Ky.  
Wm. Urschell, Woodville Lime & Cement Co., Toledo, O.  
J. T. Deely, Connecticut Lime Co., Canaan, Conn.  
J. F. Pollock, Ash Grove Lime & Portland Cement Co., Kansas City, Mo.  
G. S. LaForge, Tidewater Portland Cement Co., Union Bridge, Md.  
W. Gunther, Jr., Tidewater Portland Cement Co., Union Bridge, Md.  
W. E. Healey, Rockland & Rockport Lime Co., Boston, Mass.  
Charles Weller, Union Lime Co., Milwaukee, Wis.  
Norman G. Hough, Hydrated Lime Bureau, Pittsburgh, Pa.  
F. J. Wiertelowski, National Mortar & Supply Co., Gibsonburg, O.  
A. H. Lauman, Jr., National Mortar & Supply Co., Pittsburgh, Pa.  
R. D. Tomlinson, Grangers Lime & Marble Co., West Stockbridge, Mass.  
R. G. Spencer, National Lime & Stone Co., Carey, O.  
John Faist, Woodville Lime & Cement Co., Woodville, O.  
M. H. Deely, Connecticut Lime Co., Lee, Mass.  
Warren E. Emley, Bureau of Standards, Pittsburgh, Pa.  
R. S. Scott, General Electric Co., Philadelphia, Pa.  
A. M. Glasgow, Tennessee Marble & Lime Co., Knoxville, Tenn.  
Henry S. Spackman, Aluminate Patents Co., Philadelphia, Pa.  
A. C. Hewitt, Security Cement & Lime Co., Hagerstown, Md.  
J. I. Schlegel, Security Cement & Lime Co., Martinsburg, W. Va.  
J. C. Whetzel, Security Cement & Lime Co., Martinsburg, W. Va.  
A. H. Tennent, International Agricultural Corporation, Buffalo, N. Y.  
A. D. Heyl, Quigley Furnace & Foundry Co., Springfield, Mass.  
W. S. Quigley, Quigley Furnace & Foundry Co., Springfield, Mass.  
V. M. Frey, J. E. Baker Co., York, Pa.  
F. C. Chaney, Chaney Lime Co., Chepultepec, Ala.  
Bernard L. McNulty, Lagarde Lime & Stone Co., Anniston, Ala.  
F. G. White, Limestone Products Corp., Cambria, Va.  
G. R. Shenberger, J. E. Baker, York, Pa.  
J. M. Gager, Gager Lime & Mfg. Co., Chattanooga, Tenn.  
J. H. Forsythe, Kelly Island Lime & Trans. Co., Toledo, Ohio.  
F. A. Jones, Kelly Island Lime & Trans. Co., Cleveland, Ohio.  
Lawrence Hitchcock, Kelly Island Lime & Trans. Co., Cleveland, Ohio.  
W. H. Bradley, Duff Patents Co., Pittsburgh, Pa.  
Walter H. Carson, G. & W. H. Carson, Plymouth Meeting, Pa.  
J. L. Tyson, Philadelphia, Pa.  
C. C. Hayward, Ashland Fire Brick Co., Ashland, Ky.  
H. J. Russell, F. W. Watt Lime Co., Glenns Falls, N. Y.  
J. P. Allen, Allyndale White Marble & Lime Co., Hartford, Conn.  
Warner Moore, Powhattan Lime Co., Richmond, Va.  
F. Crudder, Riverton Lime Co., Riverton, Va.  
H. D. Pratt, Link Belt Co., Philadelphia, Pa.  
S. D. Wright, Atlas Car & Mfg. Co., Cleveland, O.

James C. Gettings, Jr., Thomasville Stone & Lime Co., Thomasville, Ga.  
John P. Coghlan, Knickerbocker Lime Co., Philadelphia, Pa.  
Lowell M. Palmer, Jr., New York City, N. Y.  
Compo Mateus, Charles Warner Co., Malvern, Pa.  
H. W. Smith, Charles Warner Co., Malvern, Pa.  
J. E. Forgy, Charles Warner Co., Wilmington, Del.  
Ward McLanahan, Blair Limestone Co., Martinsburg, W. Va.  
L. R. Voris, Blair Limestone Co., Martinsburg, W. Va.  
R. D. Tomlinson, Granger Lime & Marble Co., West Stockbridge, Mass.  
B. E. Williams, Marblehead Lime Co., Hannibal, Mo.  
F. K. Irvine, ROCK PRODUCTS AND BUILDING MATERIALS, Chicago, Ill.  
E. H. Defebaugh, ROCK PRODUCTS AND BUILDING MATERIALS, Chicago, Ill.  
Charles H. Claiborne, Union Mining Co., Baltimore, Md.  
Richard McCoy, Powhattan Lime Co., Strausburg, Va.

#### A Trap Rock Drilling Record.

Every little while we come across the records of some practical operation that is worth recording for the benefit of the practical man whose fate is more or less wrapped up in actual quarry costs.

Down in Arkansas, along the banks of the Arkansas river, there is a Basalt granite or trap rock that is much used for crushing purposes. It has a value in compression of about 40,000 pounds to the square inch, which shows it is very dense and the formation of trap makes it very hard and unyielding. In one of the quarries in that section they have a working face which is 225 feet above the river. Like nearly all other trap rock there is no horizontal stratification but vertical seams appear spaced from 16 to 25 feet apart. The quarry floor is about 25 yards wide from the face, terminating with a sloping embankment of about 15 yards down the river, the slope of the embankment being about 45 degrees. The working face of this quarry has been opened up about three eighths of a mile in length, and the drilling operations had never been carried back into the mountains far enough so that the stone could be shot off in one bench. The problem suggested itself of doing this very thing by the use of cable drills putting the holes down to a depth of 90 feet. An Armstrong big hole drill of the cable type was at hand and the holes were spaced about 22 feet back from the face, running in a straight line from 22 to 24 feet apart.

The average daily footage of the drill in this rock amounted to about 22 feet. The cost of the item of drilling after charging out the time for moving the drill, and taking one blast of five 90 foot holes as the basis, the following results come out: The time required in drilling the holes was 22½ days of 10 hours. The total tons of rock produced from the blast was 18,533. The total drilling cost amounted to \$230.62. The labor cost was a little high as compared with the average operations in this same district, because they paid the driller \$3.50 per day and the helper \$2.75. To this there was added an item of \$1.50 per day for blacksmith work, because the hardness of the trap rock drilling called for more drill bits than would have been used in a softer formation of rock. The net drilling cost, therefore, amounted to 1½ cents per ton of material displaced.

The total explosive used in the blast was 12,000 pounds of Judson powder and 40 per cent dynamite. A small amount of black powder was used to spring the holes in order to confine a large amount of explosive to preclude the possibility of leaving a toe of rock on the lower bench. The total cost of explosives amounted to \$1,440, which, divided by the number of tons of material displaced, showed 7½ cents per ton, the total drilling and explosive cost amounting to 8¾ cents.

This seems to be a pretty good showing as compared with other operations in trap rock quarries and is more in line with the cost applying to quarry operations in limestone where the rock is much softer and requires less explosives to get it out, and may be a good sample by which to judge parallel results.

#### Firebugs on a Bob-Sled.

The General Fireproofing Co., of Youngstown, Ohio, held a grand convention of their sales organization in that city on Feb. 4-5-6. It was called the Fireproof Sales Convention. W. H. Foster, P. R. Clark and W. R. Turner presided at the opening ceremonies with words of welcome and announcements of engagements. In the afternoon there were a number of papers and heart-to-heart business talks, ending with a seven o'clock dinner at the Youngstown Club.

On Friday morning there was a group photograph and some ginger and good fellowship talks on the part of the hosts of the occasion, the experts in construction and engineering as well as some of the guests. There was a grand spread at the Youngstown Country Club at seven o'clock in the evening, which was reached by bob-sled, in which the dignified visitors, who at home are considered successful business men, became harum-scarum boys and joined in the spirit of the occasion. The banquet was a great success, everyone being filled with good things as well as enthusiasm.

On the third day of the convention there was some more talk fest, in which the problems and prospects of the sales department in the season just opening were developed into definite resolves to help carve out the success of the business of the country. The final dinner was held at Hotel Ohio on Saturday evening and the very pleasant affair wound up with the singing of Auld Lang Syne.

The publicity department issued a little paper entitled "The Convention News" which was full of fun and philosophy, including a cartoon that was a "peach." It contained no war news and was much enjoyed by all the delegates.

The following is a roster of the visitors:

J. R. Fenstermaker, The Fireproofing Co., Indianapolis, Ind.  
H. R. Eastwood, Southern Fireproofing Supply Co., Washington, D. C.  
Geo. L. Morris, Herringbone Metal Lath Co., Los Angeles, Cal.  
C. W. Noble, Toronto, Ont.  
Wm. Dehler, Dehler Bros. Co., Louisville, Ky.  
Leo I. Bruce, Concrete Steel Products Co., Boston, Mass.  
B. W. Ranson, Minneapolis, Minn.  
R. E. Carrick, The Fireproof Products Co., New York City.  
W. J. Heintz, Moores-Coney Co., Cincinnati, Ohio.  
Clarence A. Donley, The Donley Bros. Co., Cleveland, Ohio.  
O. A. Austin, The Donley Bros. Co., Cleveland, Ohio.  
E. F. Donley, The Donley Bros. Co., Cleveland, Ohio.  
Ford Donley, The Donley Bros. Co., Cleveland, Ohio.  
J. E. Payne, The J. E. Payne Co., Columbus, Ohio.  
Arthur Hughes, Hughes-Keenan Co., Mansfield, O.  
N. A. Dreyfus, N. A. Dreyfus Co., Toledo, O.  
W. P. Hannon, W. P. Hannon Co., Youngstown, Ohio.  
W. D. McCreary, W. P. Hannon Co., Youngstown, Ohio.  
D. S. Donahue, The Fireproof Materials Co., Pittsburgh, Pa.  
R. B. Kelley, The Fireproof Materials Co., Pittsburgh, Pa.  
C. E. McClintic, The Fireproof Materials Co., Pittsburgh, Pa.  
R. E. Neeld, The Fireproof Materials Co., Pittsburgh, Pa.  
T. Marston, W. L. Macatee & Sons, Houston, Tex.  
N. Y. Hamilton, Whitmore, Rauber & Vicinus, Rochester, N. Y.  
W. M. Ryerson, Builders' Material Supply Co., Kansas City, Mo.  
W. J. Mirkil, Builders' Steel Products Co., Philadelphia, Pa.  
C. J. Babcock, George Batten Co., New York City.  
Walter Jahncke, Fritz Jahncke, Inc., New Orleans, La.  
C. F. Graves, Baker & Holmes, Jacksonville, Fla.  
L. A. Wood, The Fireproofing Co., Fort Wayne, Ind.  
J. C. Adams, United Fuel & Supply Co., Toledo, Ohio.  
C. Dolf, The Metal Shingle & Sliding Co., Montreal, Canada.

#### G. F. SALESMEN—EXPORT DEPARTMENT.

A. E. Hughes, H. I. Glazier, H. H. Fry, J. H. Deering, Wm. Snider, F. K. Rhines, G. W. Perkins.

The delegation from the Del-Mar-Col was about the busiest representation at the N. B. S. A. convention. President B. L. Grove, of Washington, D. C.; Vice President Pusey, and Cornell, of Wilmington, were interested in everything that was pulled off at the convention and ready to do their part. President Grove, with his rheumatism, coming a thousand miles to work out the problems of the business, should make ashamed about a thousand other men who stayed away from this convention with some paltry excuse.





Tested and approved by  
National Board of Fire Underwriters

In the production of Fireproof Gypsum Tile there are certain fundamental factors involved, such as, [1] the necessary amount of pure Gypsum; [2] correct proportion and right kind of fibre; [3] thorough mixing of the mass to insure uniformity and required density; [4] proper methods and care in the moulding

**PYROBAR Gypsum Tile**  
Fireproofing stands without an equal in quality and efficiency — it's another one of the many U. S. Gypsum Products recognized as the

**National Standard of Quality**

process; [5] efficient dry kilns and facilities for properly curing the finished product; [6] correct design of the Tile to secure necessary strength, durability, economical working qualities and safe fire resistance.

The established ability and matchless facilities of its makers to adhere unvaryingly to these prerequisites spells the reason why of PYROBAR Supremacy

"The U. S. G. line represents the progress of the Gypsum Industry"—An advantage to the Dealer

WORLD'S LARGEST PRODUCERS OF GYPSUM PRODUCTS



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**Red, Brown, Buff and Black**



**MORTAR  
COLORS**

The Strongest and  
Most Economical  
in the Market.



Our Metallic Paints and Mortar Colors are unsurpassed in strength, fineness, and body, durability, covering power and permanency of color. Write for samples and quotations.

**CHATTANOOGA PAINT CO.**

Chattanooga, Tennessee

WHEN YOU ABSOLUTELY KNOW THAT

**Ricketson's Mortar Colors**

are pure and brilliant in tone, economical in application and a permanent guarantee against fading and washing

**Why not INSIST on having them?**

They are the acknowledged best for all uses—Mortar, Brick, Cement, Concrete and stone. Red, Brown, Buff, Purple and Black.



**RICKETSON MINERAL PAINT WORKS, MILWAUKEE, WIS.**



Clyde Hydrator with Hood  
"The common sense way"

**SIMPLICITY IS THE KEYNOTE  
OF SUCCESS**

IT does not take a "master mind" to install a CLYDE Hydrating plant, nor does it take a "high priced" engineer to run one. If YOU, Mr. Lime Manufacturer, realized how simple it is to obtain a PERFECT HYDRATE, with the CLYDE HYDRATOR you would place your order with us by FIRST MAIL. Write us today—NOW, and let us explain to you what CLYDE PROCESS hydrated lime is and how to obtain the best results, then

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**H. MISCAMPBELL, Duluth, Minn.**

Patentee and Sole Manufacturer

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

# Winner Mixer

## The "BIG BEN" of the CONCRETE WORLD



**T**HE WINNER has looked all kinds of jobs square in the *Face*, been *Timed* per hour and per day, worked under thousands of different bosses but when the gong sounds the WINNER is always *on time* and ready to start.

The Winner is SO GOOD through and through that every time the clock *ticks* off ten hours—Five Winner Mixers are given new owners.

American contractors everywhere are finding the Winner the *Main-Spring* of their business and wherever you find the Winner in operation—It's the whole *Works*.

The Winner is simple, compact, economical, efficient; perfect in design, principle and workmanship. When you put it on the job it wins with *hands down*.

As a real genuine money-maker and *time saver* the Winner rings the profit bell with the biggest and boldest figures.

*Tick Tock*—the batch is loaded; *Tick Tock*—the batch is mixed; *Tick Tock*—the batch is dumped; *Tick Tock*—all day long, day after day, month after month, year in and year out, the Winner keeps Time with the clock, saving men's backs and making men profit.

Wind the Winner up in the morning, feed it a gallon of gasoline and a few drops of oil—that's all the pay it asks and with *two hands* it will do the work of *six*.

The Winner is made in four sizes—The Baby Two, The Little Three, The Big Four and The Light Six—Each one a *Jewel*. You can buy them with trucks, without trucks, with engine or without engine, with loader or without loader—any way you prefer.

The Winner is the best *Alarm Clock* for your business that you can buy—it wakes everybody up—lets people know you're on the job—turns the hours into minutes—fills your men with vim and hustle and is always *on time*.

Let us put the Winner on your work for ten days—try it by the clock and if you don't find it the most prompt, most steady, most faithful and most profitable helper on the job—send it back.

The price?—Just write the Cement Tile Machinery Company of 452 Rath Street, Waterloo, Iowa, and they will tell you the whole story.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



# CLASSIFIED BUSINESS DIRECTORY

## BAGS AND BAG TYERS.

Faerberhill Mfg. Co. (bag tyers).  
Jaite Company, The.  
United Wire Tie Co. (bag tyers).  
Urschel Bates Valve Bag Co.

## BELTING.

H. W. Caldwell & Co.  
Chain Belt Co.  
Dull & Co., R. W.  
Imperial Belting Co.  
Link Belt Co.  
Revere Rubber Co.  
Stephens-Adamson Mfg. Co.  
Webster Mfg. Company.  
Weller Mfg. Co.

## BRICK.

Belden Brick Co.  
Hocking Valley Clay Co.  
Metropolitan Paving Brick Co.

## BRICK CLAMPS.

The P. D. Crane Co.

## BRICK PAVING.

Harris Brick Co.  
Metropolitan Paving Brick Co.  
Thornton Fire Brick Co.

## BUCKETS, DUMPING AND GRAB.

Atlas Car & Mfg. Co.  
H. W. Caldwell & Co.  
Haiss Mfg. Co., Inc., Geo.  
Hendrick Mfg. Co.  
Link Belt Co.  
McMyler-Interstate Co.  
Willis Shaw Mch. Co.

## CABLES.

American Steel & Wire Co.  
Dull & Co., R. W.  
Sauerman Bros.

## CASTINGS.

Allis-Chalmers Mfg. Co.

## CEMENT, CAEN STONE.

Cleveland Bldrs. Supply Co.

## CEMENT, HYDRAULIC.

Carolina Portland Cement Co.

## CEMENT, PORTLAND.

Atlas Portland Cement Co.  
Carolina Portland Cement Co.  
Chicago Portland Cement Co.  
Coplay Cement Mfg. Co.  
Giant Port. Cement Co.  
Huron-Wyandotte Port. Cement Co.  
Kansas City Portland Cement Co.  
Lehigh Portland Cement Co.  
Marquette Cement Mfg. Co.  
Northwestern States Portland Cement Co.  
Ohio & Western Lime Co.  
Phoenix Portland Cement Co.  
Sandusky Portland Cement Co.  
St. Louis Portland Cement Works.  
Union Sand & Material Co.  
Vulcanite Portland Cement Co.  
Whitehall Portland Cement Mfg. Co.  
Wolverine Portland Cement Co.  
Woodville Lime & Cement Co., The.

## CHAINS.

Chain Belt Co.  
Columbus Chain Co., The.  
Jeffrey Mfg. Co.  
Link Belt Co.  
Taylor-Wharton Iron & Steel Co.

## CLAYWORKING MCHY.

American Clay Mch. Co.  
Bartlett, C. O., & Snow Co.

## COLORINGS DRY AND MORTAR.

Samuel Cabot.  
Chattanooga Paint Co.  
Clinton Metallic Paint Co.  
Macneal, James B., & Co.  
Ricketson Mineral Paint Works.  
Williams, C. K., & Co.

## COMPRESSORS.

Allis-Chalmers Mfg. Co.  
Clayton Air Compressor Co.

## CONCRETE MIXERS.

Chain Belt Co.  
Cement Tile Mach. Co.  
Jaeger Mach. Co.  
Miscampbell, H.  
Power & Mining Mach. Co.

## CONCRETE REINFORCEMENT.

American Steel & Wire Co.

## CONSULTING GEOLOGISTS.

Grimsley, G. P., Ph. D.  
Hunt, Robt. W., & Co.

## CORNER READS.

Bostwick Steel Lath Co., The.

## CRANES—LOCOMOTIVE AND GANTRY.

Link Belt Co.  
McMyler-Interstate Co.

## CONVEYORS AND ELEVATORS.

Allis-Chalmers Manufacturing Co.  
Austin Mfg. Co.  
Bartlett, C. O., & Snow Co.  
Caldwell, H. W., & Sons Co.  
Chain Belt Co.  
Dull, Raymond W., & Co.  
Ehrsam, J. B., & Sons Mfg. Co.  
Haiss Mfg. Co., Inc., Geo.  
Jeffrey Manufacturing Co.  
Link Belt Co.  
McMyler-Interstate Co.  
McLanahan Stone Machine Co.  
Manierre Eng. & Mach. Co.  
Power & Mining Mach. Co.  
Stephens-Adamson Mfg. Co.  
Toepfer, W., & Sons.  
Webster Mfg. Company.  
Weller Mfg. Co.

## CRUSHERS AND PULVERIZERS.

Allis-Chalmers Manufacturing Co.  
American Pulverizer Co.  
Austin Mfg. Co.  
Bacon, Earl C.  
Bartlett, C. O., & Snow Co.  
Bonnot Co., The.  
Bradley Pulverizer Co.  
Butterworth & Lowe.  
Chalmers & Williams.  
Ehrsam, J. B., & Sons Mfg. Co.  
Jeffrey Manufacturing Co.  
Kent Mill Co.  
Lewistown Foundry & Machine Co.  
McLanahan Stone Machine Co.  
Pennsylvania Crusher Co.  
Power & Mining Mach. Co.  
Raymond Impact Pulverizer Co.  
Sturtevant Mill Co.  
Traylor Eng. & Mfg. Co.  
Webb City & Cartersville F. & M. Wks.  
Williams Pat. Crusher & Pulverizer Co.

## DRAIN TILE.

American Brick & Tile Co.  
American Clay Co.  
Mason City Brick & Tile Co.

## DRILLS.

Cyclone Quarry Drill Co.  
Howells Mining Drill Co.  
Loomis Machine Co.

## DEYERS.

American Process Co.  
Bartlett, C. O., & Snow Co.  
Link Belt Co.  
Ruggles-Coles Eng. Co.

## DUMP CARS.

Atlas Car & Mfg. Co.  
Austin Mfg. Co.  
Haiss Mfg. Co., Inc., Geo.  
Link Belt Co.  
Stephens-Adamson Mfg. Co.  
Weller Mfg. Co.

## ENGINEERS.

Bacon, Earl C.  
Buckbee Co., J. C.  
Duff Patents Co., Inc.  
Dull, Raymond W., & Co.  
Fuller Engineering Co.  
Grimsley, G. P.  
Hunt, Robt. W., & Co.  
Improved Equipment Co.  
Meade, R. K.  
Sauerman Bros.  
Schaffer Eng. & Equip. Co.  
Smith & Co., F. L.  
Stephens-Adamson Mfg. Co.

## ENGINES.

Allis-Chalmers Mfg. Co.  
Power & Mining Mach. Co.

## EXCAVATORS.

Buckbee Co., J. C.  
Raymond W. Dull Co.  
Haiss Mfg. Co., Inc., Geo.  
Indianapolis Cable Excavator Co.  
McMyler-Interstate Co.  
Sauerman Bros.  
Weller Mfg. Co.

## FIRE BRICK.

Carolina Portland Cement Co.  
Improved Equipment Co.  
Mason City Brick & Tile Co.  
Thornton Fire Brick Co.  
Thompson-Armstrong Co.  
Union Mining Co.

## FLUE LININGS.

Thompson-Armstrong Co.

## FROSTPROOFING.

Lansing Co.

## FURNACES FOR SPECIAL PURPOSES.

Improved Equipment Co.

## GEARS.

Caldwell, H. W., & Son Co.  
Chain Belt Co.  
Link Belt Co.  
Stephens-Adamson Mfg. Co.  
Weller Mfg. Co.

## GLASS SAND MACHINERY.

Lewistown Fdy. & Mach. Co.

## GYPSUM BLOCK.

American Cement Plaster Co.  
U. S. Gypsum Co.  
Plymouth Gypsum Co.

## GYPSUM—PLASTER.

American Cement Plaster Co.  
American Keene Cement Co.  
Best Bros. Keene's Cement Co.  
Cardiff Gypsum Co.  
Carolina Portland Cement Co.  
National Mortar & Supply Co.  
Ohio & Western Lime Co.  
Plymouth Gypsum Co.  
U. S. Gypsum Co.  
Wheeling Wall Plaster Co.

## HAIR.

Ohio & Western Lime Co.

## HOISTS, ELECTRIC AND STEAM.

Allis-Chalmers Mfg. Co.  
Buckbee Co., J. C.  
Link Belt Co.  
Haiss Mfg. Co., Inc., Geo.

## HOLLOW CLAY TILE.

American Clay Co.  
Mason City Brick & Tile Co.  
Metropolitan Paving Brick Co.  
Whitacre Fireproofing Co.

## HYDRATING MCHY.

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A & C Stone & Lime Co.  
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Kelley Island Lime & Trans. Co.  
Mitchell Lime Co.  
National Lime & Stone Co.  
National Mortar & Supply Co.  
Niagara Gypsum Co.  
Ohio & Western Lime Co., The.  
Owens & Son, John D.  
Scioto Lime & Stone Co.  
Woodville Lime & Cement Co.

## LIME, HYDRATED.

Hannibal Lime Co.  
Kelley Island Lime & Transport Co.  
Mitchell Lime Co.  
National Lime & Stone Co.  
National Mortar & Supply Co.  
Niagara Gypsum Co.  
Ohio & Western Lime Co., The.  
Owens & Son, John D.  
Scioto Lime & Stone Co.  
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## LIME KILNS.

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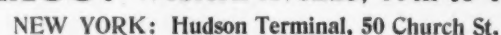
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Sturtevant Mill Co.	38
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Thew-Automatic Shovel Co., The	63
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Troy Wagon Works Co., The	3
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M-O "43" 1 1/2-yd. Traction Shovel. Stone Quarry of John D. Owens & Son, Owens, Ohio.

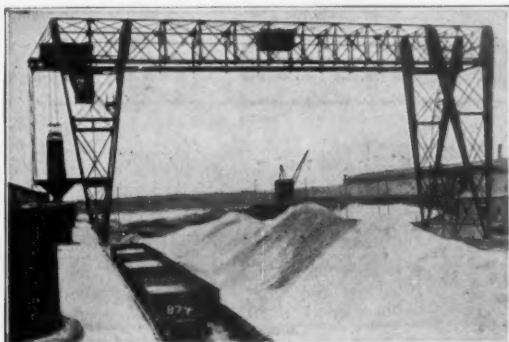
**STEAM SHOVELS****DIPPER DREDGES****BALLAST UNLOADERS****M-O "43" 1 1/2 Yd. Traction Shovel****Spur Gear Drive and Separate Steering Engine**

The Railroad Shovel is readily converted into a Traction shovel by removing the trucks, jacks, Couplers, air brakes, etc., and then bolting up underneath the frame, the forward and rear traction axles and the driving shafts. The steering engine is mounted on the floor at the extreme rear end of the shovel and is connected to a steering screw for slewing the rear axle. Power for driving is transmitted from the main engines by spur gearing direct to the traction wheels on the front axle, thus doing away entirely with the bothersome sprocket chains now employed for this purpose. The steering lever is placed within easy reach of the shovel runner, when in his usual position, so that he has full control of the steering and propelling movements.

**THE MARION-OSGOOD COMPANY**

Eastern Office:  
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Cincinnati Agency, Thaw & Williams, 202 Bell Block

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Sand Handling Gantry Crane equipped with a man trolley, 4-line, two yard Clam Shell Bucket, and rigidly attached hopper to guide the material into the storage reservoirs.

**You Can Reduce Your Handling Costs**

by the use of proper equipment for your work, which should easily and economically handle the material it was designed to take care of. That is why the Edward Ford Plate Glass Company, of Toledo, O., chose a

**"McMyler Interstate Gantry Crane"**

to take care of unloading sand from cars to stock pile, and then to the mill, as same is needed.

**The McMyler Interstate Co. Dept. P-3 Cleveland, Ohio**

**New York**

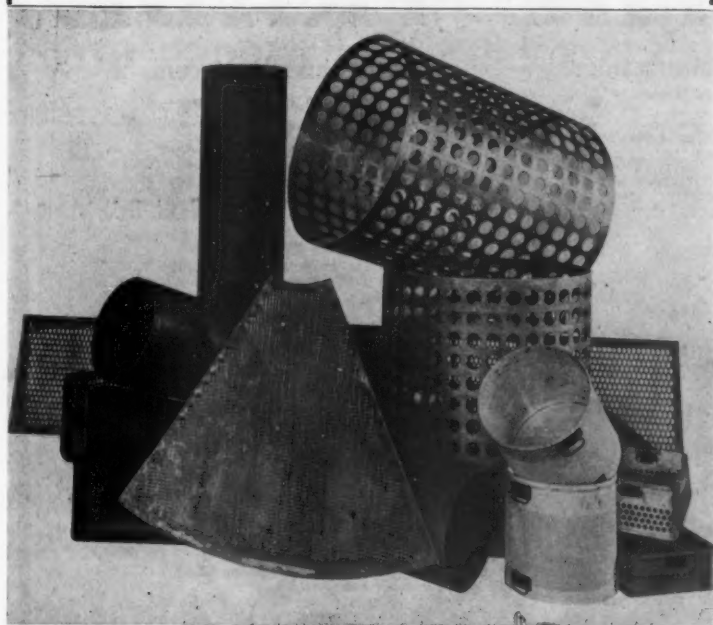
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PRODUCTS—Locomotive Cranes, All Type Buckets for every purpose—Elevating and Conveying Machinery, etc.

**PERFORATED METAL**

STEEL SCREENS :: IRON AND STEEL WORK



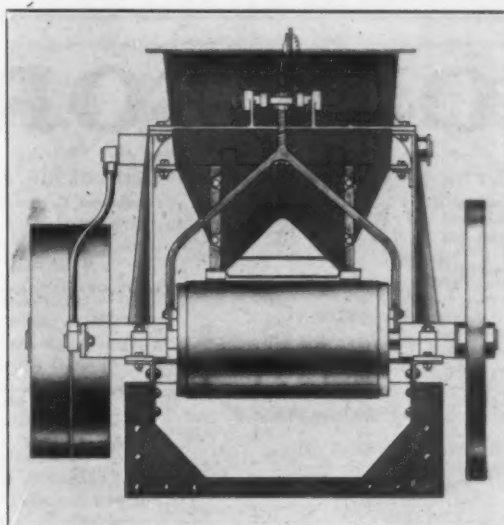
ELEVATOR BUCKETS, STEEL TANKS, ETC.

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ESTABLISHED 1855

183 Broadway

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To weigh and regulate the flow of material traveling in a continuous stream over a conveyor.

**The Schaffer Poidometers**

ARE ESPECIALLY ADAPTED FOR

Uniting different materials in correct proportions.  
Delivering a predetermined quantity of materials to pulverizing or grinding machinery.

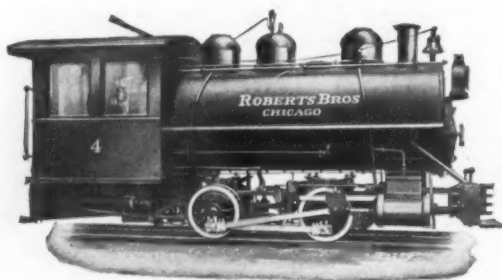
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Builders of all types of locomotives for industrial services.

**Davenport Locomotive Works**  
DAVENPORT, IOWA

## BLAST HOLE DRILLS

We make the "CLIPPER"—The drill that is USED!

**LOOMIS MACHINE CO., TIFFIN, OHIO**

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### FOR SURFACES of Cement, Stucco, Brick, etc.

Through our years of experience in the paint business, we have developed a coating for surfaces which is unsurpassed.

Gordon Coating is manufactured in white and eight shades.

This is a dealers' proposition. Write to-day for our interesting offer.

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**ROCK PRODUCTS AND BUILDING MATERIALS 537 S. DEARBORN STREET CHICAGO**

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



## Northwestern Portland Cement



The Reliable Portland Cement

A Portland Cement for the

# NORTHWEST

NORTHWESTERN STATES PORTLAND CEMENT COMPANY  
MASON CITY, IOWA



## "WOLVERINE"

THE ALRIGHT CEMENT

Made Right Sold Right  
Works Right Wears Right

The Best is None Too Good For You.  
Insist Upon

## "WOLVERINE"

Write for Booklet and Quotations.  
Factories at Coldwater and Quincy, Mich.  
Capacity 3500 Daily.

W. E. COBEAN, Sales Agent, Coldwater, Mich.

**Wolverine Portland Cement Company**  
MAIN OFFICE, COLDWATER, MICHIGAN

SUCCESS in big building work depends to a great extent on the materials used; everything must be the best by test.

## Marquette Portland Cement

"The Certified Cement"

has been used and is now being used in most of the big building and heavy construction work in Chicago. Architects, engineers and contractors who know Marquette appreciate its quality and service.

Here are a few of the big successes in which Marquette Portland Cement was used:

La Salle Hotel Chicago and Northwestern R. R. Station  
Chicago City Hall Peoples Gas Bldg.  
Marshall Field Annex and Addition Bldgs. Conway Bldg.  
Rand, McNally Bldg. La Salle Street Tunnel

Concrete for Permanence — Marquette for Concrete

## Marquette Cement Mfg. Company

1335 Marquette Bldg. CHICAGO



La Salle Hotel, Chicago

## Two Type O Thews Load Over 57000 Cubic Yards in 60 Days WITH PROPER FACILITIES YOU CAN EQUAL THE OUTPUTS GIVEN BELOW



Type O Thew Loading Gravel

Date 1914	Machine 1043	Machine 1044	Date 1914	Machine 1043	Machine 1044	Date 1914	Machine 1043	Machine 1044
	Cu. Yds.	Cu. Yds.		Cu. Yds.	Cu. Yds.		Cu. Yds.	Cu. Yds.
May 11	304	...	June 8	454	392	July 7	522	534
May 12	281	...	June 9	397	364	July 8	459	534
May 13	341	...	June 10	463	399	July 9	516	558
May 14	314	...	June 11	519	513	July 10	507	503
May 15	304	...	June 12	519	521	July 11	483	531
May 16	322	345	June 13	580	508	July 16	300	292
May 18	425	474	June 15	503	595	July 18	...	523
May 19	482	398	June 16	590	520	July 20	509	501
May 20	526	400	June 17	454	568	July 21	510	513
May 21	573	...	June 18	571	624	July 22	498	453
May 22	491	610	June 19	304	324	July 23	542	486
May 23	595	533	June 20	552	588	July 24	492	423
May 25	440	459	June 24	474	512	July 27	548	531
May 26	286	509	June 25	486	472	July 28	582	548
May 27	...	640	June 26	525	451	July 29	561	558
May 28	323	301	June 27	481	525	July 30	560	511
May 30	401	365	June 29	544	565	July 31	533	467
June 1	498	565	June 30	531	561	Aug. 1	541	488
June 2	765	470	July 1	201	207	Aug. 4	460	472
June 3	413	510	July 2	509	579	Aug. 5	410	427
June 4	142	152	July 3	496	510	Aug. 6	466	...
June 6	462	450	July 6	588	531			

Total 30051 27340

Grand Total.....57,391 cu. yds

Average per shovel per day for entire time with no deductions for any cause whatsoever, 474 cu. yds.

WRITE FOR CATALOGUE "O" AND LIST OF THEW OWNERS NEAR YOU

## THE THEW AUTOMATIC SHOVEL COMPANY, Lorain, Ohio

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

GET THIS MIXER ON YOUR MIND



## Prepared is the Owner of a Jaeger Big-an-Little Mixer

FOR THE FIRST JOB IN THE SPRING

### CONCRETE PLASTER MORTAR

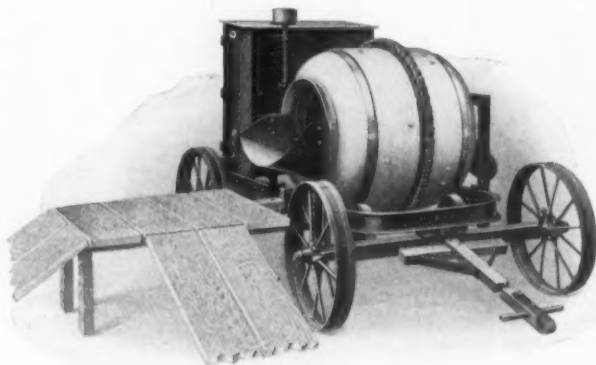
The One Mixer for All

Built like a Battleship; in four  
sizes, fourteen different outfits.A card will bring a complete catalog. Send it while the thought  
is with you.*Sold at prices that will surprise***THE JAEGER MACHINE CO.**

219 W. Rich Street, Columbus, Ohio

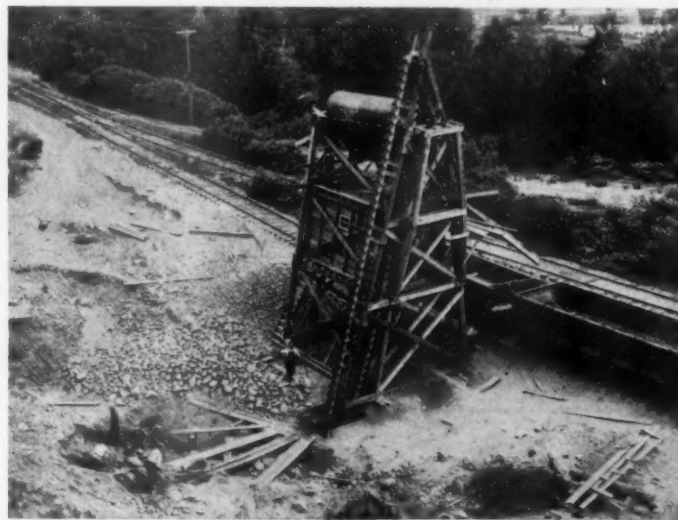


### Concrete Mixer Service As You Like It

Low charging, low priced, strong and durable, the  
Rex Concrete Mixer is daily creating new and  
enthusiastic users. A guaranteed machine for  
dealers and contractors.*Write today for our valuable information on the "mixer" subject.***Chain Belt Company**

16th Street, Milwaukee, Wis.

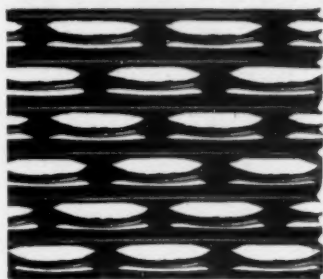
### Successful Sand and Gravel Handling Equipment

Our equipment for handling sand and gravel has  
been the result of years of careful study and inves-  
tigation. This long experience of our engineering  
department is always at the service of sand and  
gravel operators.*Our bulletin on this subject should be in the hands of everyone in the industry.*

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



## PRESIDENT CORMACK SAYS!!!



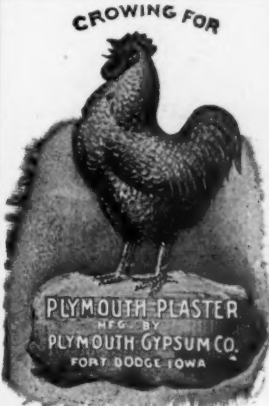
Bostwick Truss-Loop Metal Lath

"Make YOUR'S a selling organization, not a warehouse or teaming establishment."

### It's Easy

Get next to the way "BOSTWICK" will put every man who handles a customer for you in a position to talk Building Metal Goods, to increase your sales, reduce your selling expense. It costs nothing—Write now.

**THE BOSTWICK STEEL LATH CO. - Niles, Ohio**



**PLYMOUTH PLASTER**  
**WOOD FIBER PLASTER**  
**PLYMOUTH FIREPROOF**  
**PARTITION BLOCKS**  
**SACKETT PLASTIC BOARD**  
**STEEL STUDDING**

THE QUALITY BRANDS

WRITE US FOR PRICES AND  
 ADVERTISING MATTER

**Plymouth Gypsum Co.**  
 Fort Dodge, Iowa

## Dragline Cableway Excavators

SHEARER & MAYER & SAUERMAN PATENTS

Dig convey, elevate and dump in one continuous operation, from wet or dry pit, to bins, screens, cars, or storage piles. Operated with a double drum friction hoist. Buckets are designed to dump at either end of track cable and are under positive control of one operator.

Write us your conditions and requirements and we will advise you if our equipment is adaptable.

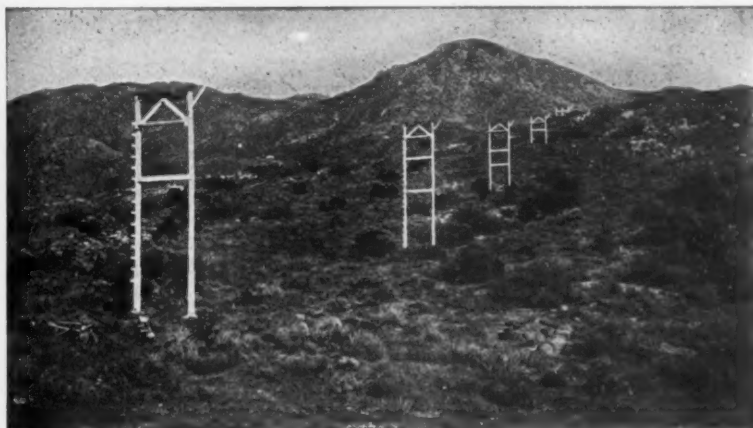


**Sauerman Brothers, Engineers**  
 1140 Monadnock Block  
 CHICAGO, ILLINOIS

You can have from us, if desired, a firm bid for the Lawson Automatic Tramway.

## DELIVERED AND ERECTED

IT is the invariable practice of other builders to make a price delivered F. O. B. cars. The cost of erection is always at the owner's risk, under per diem supervision furnished by the builders and based only on an estimate. While this is just and equitable, the average buyer nevertheless generally prefers to know absolutely what his tramway will cost him complete and ready to run. Now he can know. Why do we have this advantage? The Ambursen Company is not a manufacturer of wire rope, but is organized as



ACROSS THE DESERT

Engineer-Constructors. For ten years we have handled heavy construction amounting to many millions of dollars, in busy times having as high as 3,000 men in the field.

The officers of the Company, in various capacities, have had a construction experience of from twenty to thirty years. We are therefore familiar with every detail of construction economy and are organized and equipped to carry out work of this character on a contract basis.

There is not sufficient space in this advertisement to set forth the character of the information which must be furnished by the purchaser. All this will be brought out by correspondence. In your original inquiry merely give us general data as to length, capacity and grade of line and kind of material handled.

Bulletins A and B describing the Automatic Tramway will be sent on request and several other Bulletins are in preparation.

— VERY RESPECTFULLY, —

**AMBURSEN COMPANY (Tramway Dept.) 61 Broadway, NEW YORK**

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



## Prompt Delivery— A Big Factor to the Cement Dealer

Every day of the year — during the rush as well as the slack seasons — LEHIGH maintains its reputation for efficiency. ¶ Twelve LEHIGH mills, geographically located to insure quick distribution, with annual capacity over 12,000,000 barrels, enable us to make prompt shipment on all orders. ¶ LEHIGH is the logical brand for you to handle. More than 10% of all cement used in the U.S. is LEHIGH. It's the cement your customers will demand.

**Lehigh Portland Cement Company**  
ALLENTOWN, PA. CHICAGO, ILL.



## A New Ceresit Product

**DEALERS!** Here is a new specialty for you. A liquid waterproofing for cement mortar, porous natural stone, clay ware, concrete blocks, art stone, etc.

**CERESITOL** is a bluish-white liquid. It is applied with a brush and after it dries out leaves no trace of its presence, consequently does not affect the color of the material on which it is applied in any degree. It is not a paint! It leaves no film, but enters into the pores.

**CERESITOL** comes ready for use. Simply stir thoroughly and apply. One gallon covers 150 to 200 square feet of surface.

**CERESITOL** does not waterproof against water pressure, but insures absolute protection for outside work, as indicated in our second paragraph. It makes an ideal foundation or filler for the application of oil paints.

Write us for **Ceresitol** folder and dealers' discount. Here is a money-maker you should not overlook.



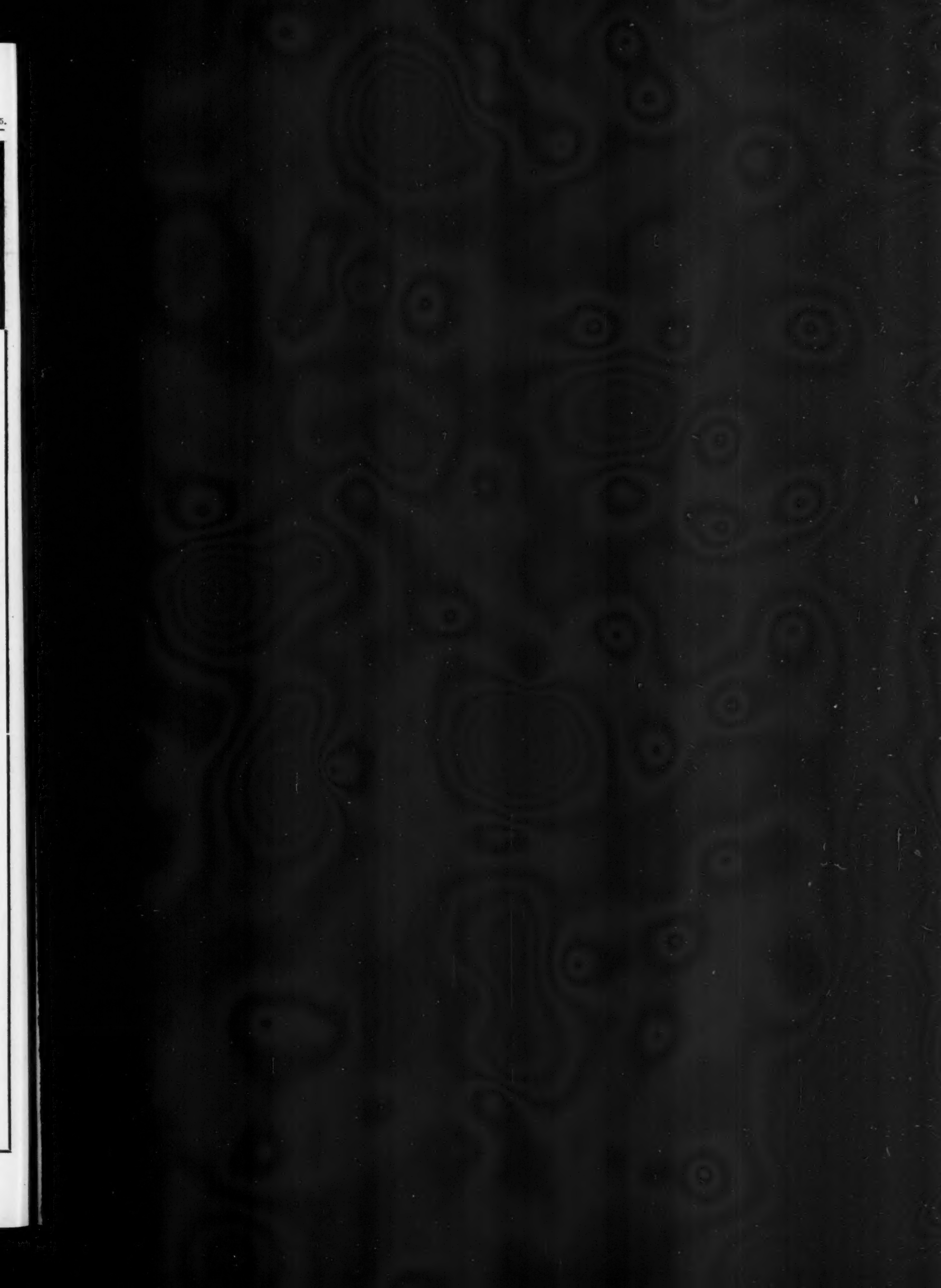
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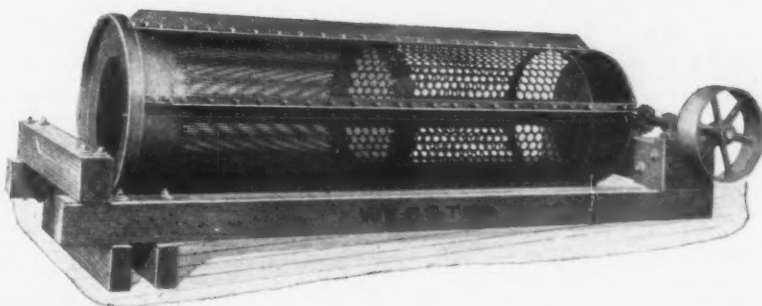




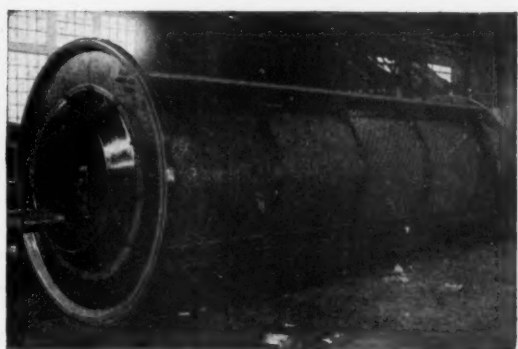


# WEBSTER SCREENS

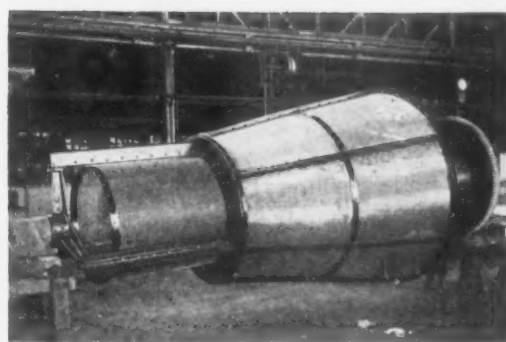
NI  
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FORMS



FOR  
ALL  
PURPOSSE



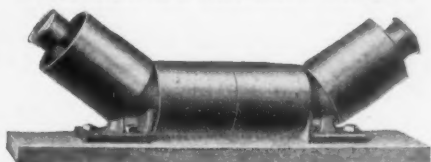
Stone  
Sand  
Gravel  
Etc.



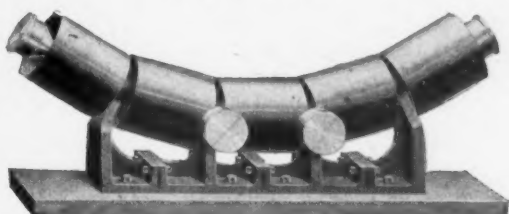
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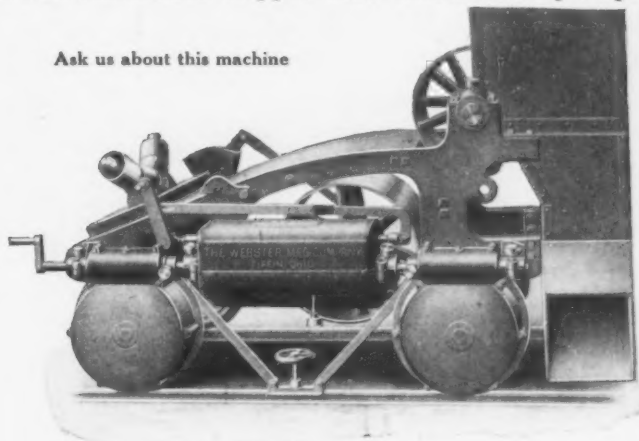
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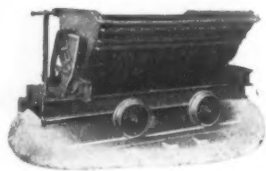
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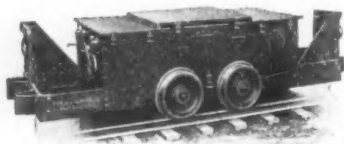
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